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DISEASES AND INJURIES

OF

SEAMEN:

WITH

REMARKS ON THEIR ENLISTMENT, NAVAL HYGIENE,

AND

THE DUTIES OF MEDICAL OFFICERS.

BY

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AS A TOKEN OF THE RESPECT OF
THE AUTHOR.

For

Pres. S. S. H. H.

L. A. Eagles

M. D.
U. S. N.

with the respects

of the Author.

Sec. 15th

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P R E F A C E .

It was suggested to me by one of the late able editors of that popular work, the Medical Examiner, that I might insert in it with utility an essay on the enlistment of seamen and examination of recruits. After having acted on this suggestion, it appeared to me that it would be more useful to publish in the same journal some of the most interesting cases and most important facts witnessed by me in my practice, for although it may not have been novel, yet its success or unsuccess might, when known, serve to confirm or diminish justly the confidence of others in its efficacy. Accordingly several essays on the diseases of seamen, after one on naval hygiene, were published. Others were prepared, but the retirement of the above-noticed editors of the journal, and alterations made in its mode of publication, as well as other considerations, have caused me to think it would be more advantageous to review and correct my remarks, to write others, and to publish all of them together in a distinct form. As the limited size of the journal did not permit me to write at large on any of the subjects treated of, I have sedulously avoided any display of knowledge obtained from other authors, and have confined myself, almost without exception, to observations made in

my own practice while actively employed in the naval service, and embracing a period of twenty-eight years. Nearly thirteen of these were spent in our national ships and in the fulfilment of the duties of the various grades of the medical corps on four foreign stations. But before writing again concerning the practice of medicine or surgery at sea, I will make some observations on these duties, as they may benefit especially such of my readers as are novices on board ship; and others who have no practical experience regarding this mode of life in the naval service, or who are merely thinking of going to sea, and need information respecting the duties required of them, before they are undertaken; as does the author of the letter just received by me from a distant State.

Some remarks relative to those of physicians attached to private vessels will likewise be appended, as these are vastly more numerous than ships of war, and the health of their crews is a subject of the utmost importance to all persons interested in the prosperity of commerce.

DISEASES AND INJURIES OF SEAMEN.

CHAPTER I.

Duties of Medical Officers; General Remarks upon the former. Specific Duties of Assistant-Surgeons, Passed-Assistant-Surgeons, and Fleet Surgeons. Duties of Surgeons' Stewards. Want of Apothecaries. Physicians of Private Vessels. Mode of Appointment. Great Defects existing. Proposed Examination by a Board of Physicians in every Port, and Rules to be observed.

The life of every physician in practice is subject to many vexations from the nature of his profession. On ship-board, and particularly when he is at sea, he is still more liable to annoyance from the inconveniences he must of necessity suffer from his constrained position, his not having at command the space required to practice successfully, or such remedies and appliances as can be had on land, and often being brought into contact with persons of entirely different habits, manners and ideas.

But the medical novice, from not being acquainted with them, much less familiarized, and being both ignorant of laws, regulations and usages, which are frequently as important as the former, is apt to be mortified from such ignorance, and being really uninformed of either what share of professional duties belongs to him, or of those of a collateral kind and

having no relation to his profession. In the merchant service there are few of this kind ; the physician in it has little else to do than to attend the sick and heal the wounded, and be subject to a little restraint from the few regulations enforced. In the navy it is different ; the medical man is constantly liable to commit blunders in etiquette, and violate rules made to enforce discipline and excite respect to superior rank, as well as to insure prompt attention to orders and their proper execution. The novice, then, of the medical corps has two distinct sets of duties to perform—naval and professional—and a third set forming a combination of the two. The first of necessity must be done, the second so far as apportioned to him, and the third agreeably to what is due the service and his profession. The last named duties are frequently the hardest to perform, from the difficulty in defining them, and hence the collisions and misunderstandings which so often occur between medical men and others of the navy. Among the causes of their misunderstandings may be named those points of duty and etiquette not defined by law or regulation, as, for instance, when the officers of various grades form mixed boards, meet in public processions, have their respective duties to clash, and each set think their own the most important to be fulfilled ; the medical officers looking only at what relate to health, the others to the discharge of duties in no manner relating to it, except in a detrimental manner, as by the exposure of a crew to contagion or infection, or to excessive heat, cold, moisture, and the noxious influence of bad water and provisions. The wetting of the lower decks is one of the most frequent causes of these disagree-

ments in illy regulated ships. In others they seldom occur, as they are rarely washed without the consent of the surgeon. The admission and discharge of persons from the sick list likewise is a frequent occasion of disputes. Some are for being put on it without being fit subjects for treatment; others object to being left off the list, when deemed well by the medical officers; and a third set object to being put on it at the same time that they want and apply for medicines. A fourth set desire to be reported as sick and excused from duty, but wish to treat themselves, or to be treated by the assistant surgeons instead of the surgeon, or by one of another ship, or, if in port, by private physicians. According to usage, and in conformity to what is most promotive of good order, none of these things are permitted, excepting occasionally from courtesy and convenience to individuals. The surgeon of a ship or station, as regards his professional duties, is only to be controlled by the Fleet Surgeon, or Chief of the Bureau of Medicine, and by them only so far as their duties justify them. The surgeon likewise has the entire charge of the medical department, and is held responsible both for all public property belonging to it, and for the good order and treatment of the sick. To allow then any other person to interfere with him would be productive of disorder, and destroy such responsibility. It would, moreover, be impossible to make a judicious expenditure of medical stores or appliances, or properly to distribute the services of cooks, nurses, stewards or assistants, if they were to be at the command of other persons than the surgeon. If this were permitted it

would be as impossible to have the medical department well managed or provided with necessaries as for the ship to be well navigated, and provisioned, or watered, when left to the control of a multitude. From time to time also disputes arise about retaining invalids on the sick list contrary to the wishes of the commander or other officers. At other times men get on the list by feigning indisposition to save themselves from punishment, or to skulk from duty. The former was very common during the reign of the colt and cats, and the surgeon was then obliged to be very watchful to escape impositions, at the same time that he was called upon to save his patients from being compelled to do duty when unfit for it, and from the infliction of punishment they were unable to bear. If medical officers, however, attend to their own duties, and do not interfere unnecessarily with those of others, they will rarely have cause of complaint. Their duties are generally too distinct from others to clash, their profession, education, good breeding, and attention to the sick will commend them to persons of all other grades, and they will receive manifold evidences of esteem and respect, although now and then ebullitions of anger and misunderstandings may occasion mortification. Were this not to happen medical officers would enjoy a rare exemption from it and others possess superhuman forbearance. Confined for months and frequently for years in the same ship, it would be strange indeed if petty annoyances were not mutually suffered, and discussions about what is due the physician or patient, or upon subjects of politics, religion and other topics did not give rise to angry

words. As the relative rank of medical officers has not yet been legally determined, the respect due them remains a mooted point, and is a fruitful source of contention, from the diversity of sentiments on the subject. But we expect soon to have this settled, and then it cannot continue a cause of dissention. With regard to the general duties of medical officers, it may be observed that they are confined chiefly to the treatment of invalids, and the most important are discharged by the surgeons or under their supervision by their assistants. Of these one to three are allowed, according to the size of the ship. A sloop of war is entitled to only one, a frigate to two, a ship of the line to three. No vessel is allowed more than one surgeon, and none smaller than a sloop are allowed any, but is entitled to only one passed assistant or assistant surgeon. In accordance to immemorial custom and regulation, the surgeon every morning prescribes for all invalids in the sick bay, or other parts of the ship, as most convenient. Between the tropics, in frigates and ships of the line, the gun-deck is the most preferred from its airiness. In sloops and other smaller vessels the berth-deck is used exclusively; and after the sick have been examined, prescriptions given, and notes made in the day book and register, the surgeon makes a written and detailed report to the commander of the persons unfit for duty, while an assistant writes another simply making known the names and rank. This list is deposited in the binnacle commonly, and hence takes that name. In the evening the surgeon generally visits the bay again, and at other times, if required,

but usually the assistants do so between the regular hours of attendance, and prescribe for casual cases during the day and at night. The surgeon also attends to general sanitary duties, respecting clothing, food, avoidance of contagion, interviews with health officers, obtaining of pratique before or after quarantine, the giving of certificates of disability for pensions, and the survey of invalids deemed unfit for service. This is commonly done in squadron by surgeons of other ships than those to which they belong, as it is considered that their opinions are already formed. When the surgeon is unwell, absent, or otherwise not able to do duty, the senior assistant is held responsible for it, but usually the junior alternates with him, as he does in their ordinary duties.

Assistants and passed-assistants, besides acting as aids to the surgeon, are held responsible for most of the minor duties of the medical department, as cupping, leeching, bleeding, compounding and dispensing medicines, the application of dressings, the keeping of the journal after writing remarks in the day book, the keeping of accounts, the making out of bills, the writing or copying of official documents, and the discharge of any casual duties required by the surgeon. But many of these are done by his steward, especially when there is only one assistant in a ship, and very commonly when there are two or more. When the stewards have been competent, sober and faithful, this may have benefitted the service, besides saving a vast amount of labor to the assistants; but these qualities are rarely attainable in men so poorly compensated, and getting less than common laborers on

land ; and when they are attained in any steward he is certain, on the first opportunity, to engage in any other business which will properly reward him. The stewards who remain in service, therefore, are mostly obliged to do so from necessity, are frequently incompetent, of bad habits, and partake of those common to sailors. Like to these, they become lost to their friends on shore, finish their cruises, squander their pay in idleness and dissipation after they have been discharged from service, and return to it again as stewards or sailors, accordingly as they are needed, when want compels them to ship or starve. It is common then to see the stewards alternating between the duties of the fore-castle and dispensary. Of late, too, it has become more usual from their being shipped as landsmen before appointed as stewards, that they may be degraded if they do not give satisfaction. Hence, in a ship lately arrived here, there were one steward and two ex-stewards who had been disgraced. But I have never yet known a steward to be promoted to any higher station or given more pay, although of the greatest proficiency, and he has most faithfully done his own duties and many of those of assistants. It would not be proper, unless regularly educated, for stewards to be commissioned as medical officers ; but it is nothing more than just for them to be promoted to the rank of apothecaries, all of whose duties they perform, or at least to be paid according to their ability and length of service. Nevertheless, I do not recommend that they should have these duties exclusively assigned them, for it would be a very great injury to the medi-

cal officers, by their being caused thereby to lose rather than increase their knowledge of *materia medica*, which is essential to them in every grade, from that of assistant to that of surgeon of the fleet, who, though he may never be obliged to compound medicines, has often to inspect them, as well as to purchase and prescribe. As a member too of a board of examination for the admission of medical officers into the navy, it is important for surgeons to be adepts in the *materia medica*, and when deprived by sickness, death, and absence of assistants and stewards, they may be obliged, as I have been, to act as apothecaries. For they are not like physicians in towns and cities, who have a choice of fine apothecaries to serve them with the choicest medicines at all hours, although a death is sometimes caused by carelessness, if not ignorance, as recently here, when a child was killed by a dose of oil of rosemary given instead of one of castor oil, and as likewise happened when a young lady took three or four grains of sulph. of morphine for the same quantity of quinine.

Accidents of a similar kind, though not fatal, have occurred in our naval service, and one which lately came to my knowledge would certainly have been so, had it not been that the surgeon of the ship, having luckily been informed of it, administered an emetic and caused the patient, a commander now in service, to disgorge the fifteen grains of extract of belladonna given to him by the former's steward, in place of the same quantity of extract of taraxicum. Nevertheless, for three days afterwards the patient suffered from nervous twitches, like the prickings of a pin, and other

symptoms induced by the poison. This accident proves that, although a person may know how to prepare medicines, he may be ignorant of their effects. Hence, no one should be entrusted with the compounding of them unless he should at least know in what doses they can be given without risk of life. As no apothecaries are allowed in our ships by government, the medical officers are the only persons in them who can be properly entrusted with the preparation of medicines. This is the more requisite now from their concentrated virtues being so much used as to demand constant care, lest some of them, as morphine, strychnine and other poisons, should be given in large doses. But if apothecaries were allowed in service, they would not willingly, if at all, perform the many menial offices performed by stewards, and it would be necessary either to continue these in service or to get other persons to do them. From the strong dislike a steward of one of our ships of war in the Pacific had to them, he became dissatisfied, applied for his discharge, proffered his resignation, and not having had it accepted, forged a permit as coming from the captain, was allowed to leave her for the shore and deserted. Had he not been an apothecary, and simply a surgeon's steward, he would probably not have been degraded in his own estimation by having to clean the dispensary, or perform other duties usually done by nurses and servants.

But it would be a great improvement if accomplished apothecaries were allowed in service ; and they might be made not only to act as dentists, but to perform duties now assigned assistant surgeons. This might

be done even, with economy, in large ships with two or three assistants as a complement, by substituting an apothecary for one of them. Another advantage of this change would be that the latter might be permanently retained in service, and impart to it the benefit of long experience. In the French navy this is said to be the fact, and of course the apothecaries must not be regarded as a degraded class, as in ours, where they are rated as stewards, and put on the same footing as those belonging to officers messes and pandering to their appetites. Until apothecaries are allowed and ranked as such, we can only hope by accident to obtain competent ones in the form of stewards, and then frequently to have them of bad habits and driven into service in consequence of them. Of necessity then the assistants must still be held responsible for dispensing medicines as long as this continues, and surgeons must, when without them, have to do like duties in emergencies, as happened to me at the time above alluded to, during a six months cruise in the eastern part of the Mediterranean, where I was sent without an assistant or steward, and the only nurse allowed got sick of a fever prevalent among the crew. I therefore had the alternative either to perform the duties of the dispensary and also administer the medicines after prepared, or to see my patients suffer. There was no hesitation on my part what to do; the former alternative was chosen, and neither then nor afterwards was any self-degradation felt, but I experienced the satisfaction of knowing that my duty had been done to the sick, the service and humanity, although others might have

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been ashamed of doing what was done, notwithstanding some of their fathers practising in the country are daily doing the same. Fortunately, however, we met with the flag ship after some days, and Com. Patterson sent one of the Fleet Surgeon's assistants to my relief, having given him the choice of doing without his services, or of not sending home, in our ship, the confirmed invalids in the former.

The duties of a Fleet Surgeon consist in a general supervision of the medical officers of a squadron, the approval of requisitions for medicines and other articles needed for the sick, the approval of bills for them, the communication of any professional information concerning the squadron to the Navy Department, through the Bureau of Medicine and Surgery, the furnishing of quarterly and other reports, and of accounts required by the latter, and holding consultations in any other vessels than the flag ship, when required. Other duties are executed by the Fleet Surgeon, according to the direction of the Commander of a squadron, and the former is also required to perform the duties of surgeon to the above vessel. Hence, occasionally these duties are liable to clash with the others, from their having to be done at the same time. It would be better then if he were held responsible only for those properly belonging to a fleet surgeon, as is the custom in the English navy. There are likewise duties required of a surgeon which are unbecoming the latter, and serve to degrade him in public estimation, from their being of a trifling kind. From this cause a Commadore, with whom I served, dissaproved

of their being done by me, and thought it would be as improper as for him to attend to the ordinary details of his ship. He thought that a fleet surgeon ought to have no more to do with those of his medical department than of those of any vessel in the squadron, except so far as it was more convenient to attend to the former. In a large squadron this would certainly be the best method to be adopted, as it is then not possible for a fleet surgeon to properly do the duties of his own grade and those of surgeon at the same time.

The collateral and mixed duties of medical officers embrace those commonly done by others; as attending muster; divine service; court martials; and boards of examination; reporting of deaths; attending funerals and public processions; paying marks of public respect to superior officers; and to those of other ships and stations; or officers belonging to foreign nations; sleeping in the apartments and other places assigned medical officers; conforming to mess and other regulations for common benefit; dressing according to order; obtaining permission from the commander and executive officer to leave the ship; reporting their return; keeping a register of the weather; and conforming to the special instructions as well as general ones issued by the navy department. These are too numerous and too variable to mention; and I will only further add that there are duties due by medical officers to both science and their profession, which should not be overlooked, and among the most important are those of collecting useful information concerning the natural history, and particularly that of

a professional kind. Of the latter the treatment of diseases, the cure of injuries, and the examination of the dead are the most worthy of attention. But the medical officer in obtaining the last named information must expect often to be thwarted by the prejudices of the deceased's friends and messmates, though he may be favored by the assent of his commander, who like others may pay too much respect to such prejudices, and not exert his authority to overcome them. For these reasons it is not advisable for a medical officer to wantonly dissect any person, and when he does so to do it only when he really is uncertain what morbid changes may exist in the dead.

In merchant vessels the duties of medical men are much less defined than in the navy. Every owner of one has it in his power to vary them, and, of course, much irregularity exists with regard to them, as well as the necessities required for the sick. Generally no settled place is fixed upon to accommodate them, the stock of medicines, of provisions and appliances are inadequate for the sick; no nurses are allowed; and the physicians, though competent, cannot practice with proper success. In English emigrant ships one is required for every 300 persons, and any of ours trading with Great Britain must conform to the regulation; but I was assured by the physician of one of the latter which lately arrived from Liverpool, and is one of the largest size, that the only person he had to assist him in attending the sick was the carpenter. It is then evident that laws are requisite not merely to oblige the employment of a certain number of physicians in merchant vessels, but that they should

be furnished with all the aid and appurtenances demanded, to enable them to practice with success as well as with due regard to the comfort of the many miserable sailors and passengers who may need their professional services. A law, also, requiring ship owners who employ physicians, to obtain such as can produce satisfactory evidence of being well skilled in their profession, of good habits, sound health, and ability to attend the sick, is a general desideratum. For now such physicians are employed at random ; any inexperienced one may be taken, and a different one each time that a ship crosses the ocean from one port to another, and without other compensation than the privilege of a passenger free of cost. This was all the compensation given the physician of the above packet, and though he travelled in England, it is improbable that he will ever again, on the same terms, enjoy that privilege ; nor is it to be expected that any other would accept them oftener. Necessarily that packet, and others supplied in like manner with physicians, can never retain them long enough to be truly useful, not only from their being well experienced in the treatment of the diseases and injuries of seamen and passengers, but from their being well acquainted with all the contrivances, arrangements, and medical stores wanted by the sick, and from the physicians having got accustomed to their new mode of life, and so habituated to the motion of a vessel as not to suffer from sea sickness, and to be enabled to perform any professional duties without awkwardness, whether the ocean be calm, or agitated by a tempest. For the greater comfort of the sick,

the maintainance of the rights and respect due our profession, the physicians employed should have laws establishing all the allowances, privileges, as well as acts of courtesy due them. They should not be left to the caprices and interests of ship owners or masters, and as far as possible ought to correspond to those of our navy. Although Congress might not have the right to dictate the pay due to private physicians, it certainly has that of regulating the subsistence of merchant seamen and passengers, and protecting them from oppression, unnecessary hardships, and exposure to disease or injury. The laws respecting the inspection of steam vessels, and fixing the number of passengers according to the size of a vessel prove this, and are among the most important ever enacted for the safety of our fellow-beings; but others of equal utility remain to be made and executed, and of those none are more worthy of attention than those above recommended.

So far as human life and comfort are concerned, it is just as important to have the best medical attendance in the merchant service as in the naval of any country, not even excepting England, notwithstanding the immense number of seamen employed by her government. But the number employed by ours is not a third so much, although our merchant service employs nearly as many, if not more than hers. If we likewise calculate the vast number of passengers carried by our private vessels, we will find that it is still more important for them to have good physicians, not only from the above circumstance but the number

of sick among them greatly exceeding in proportion the number found in our men of wars on the most unhealthy stations.

The mere presentation of ordinary credentials would not be found sufficient to ensure competent physicians in merchantmen. That was all that was for many years required in our navy, and yet many incompetent men got into it and remained, some until death, others until the establishment of a Board of Examination, before whom all assistants were required to appear before promotion. That private physicians should undergo an examination before a similar Board before employment in merchant vessels, especially packet and emigrant ones, would be a grand improvement, and is more necessary than in public ships, because of these having medical officers generally of different grades, and never when large having the lowest ones fulfilling the duties of the higher, except when these are absent, sick, or otherwise unable to attend to their duties. In merchant ships very rarely more than one medical officer is allowed, and he, at the moment of entering into them, has entire control of the sick and injured.

In every port from which such vessels sail it would be very easy to have a Board of competent medical examiners appointed, before whom individually or collectively, every physician might be examined and found qualified before he is allowed to serve in any of these or other private vessels. The amount of medical knowledge required for them might be as great as for men of war, although so many collateral qualifications might be superfluous. Generally it would

be found best for candidates appearing before this Board to be examined as in the navy, when all the members are present, that every one might hear how the candidates acquit themselves before each one, and that no partiality might be shown. To ensure this more perfectly, a certain number of spectators of the medical profession might attend, unless opposed by the examiners from their timidity and diffidence. As in the navy, also, the following rules might be observed :

1st. The physical ability of each candidate might be ascertained before his literary or professional examination is begun.

2d. An enquiry might be made into his habits, morals and character.

3d. When the candidates have given satisfaction in these respects, his literary qualifications might be ascertained, and if they be not sufficient to discharge the collateral as well as the professional duties of a physician he should be rejected. It would be unreasonable to expect him to be an accomplished scholar, but he certainly ought to have such knowledge of his own language as to be able to write it correctly, and to possess a sufficient knowledge of Latin and Greek to write prescriptions accurately, and understand the names of diseases, as without such knowledge he might be guilty of fatal blunders. After having given satisfaction as to his literary acquirements, those of a professional kind ought to be tested, and as far as possible in a practical manner, for we have long since learned in the navy that candidates may be able to answer questions proposed in anatomy, surgery,

materia medica, chemistry, and the practice of medicine, and yet be unfit to perform some of the most trifling operations required, and to determine the pathological state of a patient, or prescribe the appropriate remedies in many of the most ordinary diseases.

To ascertain accurately the relative qualifications of candidates for the merchant service, a merit roll ought to be kept, on which, in its appropriate place, the degree of merit of each candidate, in each requirement should be put down. A roll of this kind is kept by our military board of examiners, and has been recently introduced into that of our navy. Each requirement is assigned a number—the highest is 100, the lowest 20—and the candidate who obtains the highest aggregate number, or attains the nearest to 1000, is entitled to the first appointment, and ranks all other candidates. The following is the roll or scale of merit adopted by the recent Board of Naval Examiners, at the recommendation of the Chief of the Bureau of Medicine and Surgery. The roll is arbitrary and ideal in its arrangements, and may not accurately determine the relative value of each branch of knowledge, but still enables the Board to more accurately assign the rank of the candidates than when little or no regard was paid to the subject, every branch was given the same value, and when the votes having been taken, a candidate possessed of the highest degree of merit in the practice of medicine and surgery was put on a par with, if not reduced below him who was more learned in some of the subordinate branches.

Merit Roll of Candidates examined by the Naval Medical Board convened in the City of Philadelphia, on the 6th March, 1854.

Physical Qualifications.		Maximum. Minimum.	100 80	100 80	100 80	100 80	100 80	100 40	100 50	100 50	100 20	40	750	Merit.	Theses.
Medical School.															
General Aptitude.															
Literary and Scientific Acquirements.															
Anatomy and Physiology.															
Principles and Practice of Surgery.															
Principles and Practice of Medicine.															
Obstetrics.															
Materia Medica.															
Chemistry.															
Medical Jurisprudence.															
Aggregate.															
Positive.															
Relative.															
Age.		Theses.													
Yrs. Mos.															
Residence.															
Nativity.															
Names.															
No.															

CHAPTER II.

Enlistment of Seamen, and Examination of Recruits in the Marine Corps. Forms observed. Method of Examination. Certificates given. Numbers Examined and Rejected. Physical Examination of Candidates for admission into the Medical Corps of the U. S. Navy, and into that of Midshipmen. Causes of Rejection. Relative proportion of the rejected and liability to Imposition from recruits.

The importance of this subject must be apparent to every reader, and I shall not enlarge upon it, but go on to speak of the most interesting parts. By the term seamen we mean all persons who enlist for the naval or merchant service, whether boys or men—mere landsmen, or sailors who have become more or less perfect in their trade. We also include in the term all persons serving in other capacities, on board ships of war or merchantmen, whether impelled by sails or by steam—and, we may now add, by heated air. By the term recruits we mean not only seamen of any grade, but marines, engineers, warrant and commissioned officers, &c., of any kind, who are subject to the inspection of surgeons and physicians, privately or publicly, for land or sea service, in our navy, army, volunteer and militia service. To every medical man the duty of inspecting such persons is liable to happen, and to him is left the decision, whether they be fit or unfit for service, either before or after enlistment ; and he may be called on to rein-

spect recruits seeking discharge, or deemed mentally or corporeally unfit for service by their commanders. Frequently friends and relations may be the applicants for their discharge, and claim it on account of their ill health, when no other good reasons can be urged. It is very common for recruits to give most favorable accounts of themselves, to get enlisted, and, after admission into service, to become despondent, from loss of natural or artificial excitement—to regret what they have done, for various reasons, and feign or really deem themselves incompetent to discharge the duties required of them. The next act is to interest friends to get them discharged. To effect this many means are adopted, but none so willingly and conveniently as those intended to impose on the doctor, or to convince him that either he or some other medical man had overlooked certain defects at the recruit's admission into service. It becomes then necessary for the inspector to keep all his senses awake, to prevent imposition, professionally, upon himself, to do justice to those inspected, and above all to secure for public or private employment men who are competent in mind and body to discharge their duties. The passing of an incompetent person may please him and his friends, but injure the service in which he engages, and cause a fine to be imposed, much to the damage of reputation and mortification of the inspector, as in an instance related to me by a commander of our navy. An Englishman, shipped for the naval service, feigned lameness in one of the lower extremities, and to substantiate his assertions

of disability—even before he got to sea—exhibited a huge scar upon it. A survey of him was ordered—the above and several other officers were ordered for that purpose—at Norfolk, and believing the man lame, they pronounced him “unfit for service,” and recommended his discharge from it to the Secretary of the Navy. He accordingly directed it to be done, and the surgeon, most unjustly, to be mulcted in the sum advanced as pay, which is generally for three months. The order was promptly obeyed—the seaman was regularly discharged from the navy—a boat took him ashore, and no sooner had it touched the beach than he leaped on land, jumped into the air with joy and exultation, made a most insulting exclamation and gesture at the boat’s crew, and ran into town as actively as any man in the ship could have done. One of my earliest recollections is of a like survey of a soldier in a militia regiment encamped in my native place, and on their way to defend the State against the invasion of the English, infesting with their fleet the lower counties of Virginia. The feigned invalid, however, was not so successful as the above. He had a very sagacious and experienced country physician, residing in the adjacent village, to deal with him. He was not to be fooled, and required ocular demonstration. The soldier, therefore, had to pull down his trowsers, to exhibit the rupture complained of. The doctor could find none—swore he was as sound as himself, and refused a certificate. However, the man got his discharge, though in a dishonorable way, for he was ordered to leave the camp, and was

disgraced by being marched through the entire length of the village, with a drummer and fifer playing the rogue's or some other degrading march, and a crowd of boys hooting at his heels. To avoid similar impostures to the one first mentioned, and to be able to prevent the successful attempt of any individual making one like the second, or to keep out of employment persons physically unsuited for it, I will now mention the general rules adopted by myself and others, and which I recommend after the inspection of more than two thousand persons within the last eight years, without counting many straggling cases examined by me while not engaged regularly in the recruiting service, and likewise exclusive of many hundreds inspected anterior to that time, in active service, and while attached to the U. S. Rendezvous Philadelphia, in 1834, '35 and '36.

To secure the government against the introduction of physically unfit persons into the naval service, the rule adopted there is for the officers of the line to refer them for physical examination to the surgeon, after they have been found in other respects suitable. If he pass them, he gives printed certificates of his having found them fit for the naval service, and on the same one writes a description of them, viz.: of their "birth-place, age, color of the eyes and hair, complexion, trade, height, marks of vaccination, &c., and the number of years they have been at sea and in service." When the surgeon has finished these certificates and signed them, one of the other officers fills up the blank orders at the foot, for the recruits

being taken on board the receiving vessel. They are then, if sailors, generally given several days' liberty, and retire with their landlords, after these have taken the certificates and become their security. For this and money advanced they charge a large per centage. The recruits having had their frolic, if sober enough, are, at the expiration of their liberty, delivered on board, with the clothing and bedding required, and re-examined by one of the medical officers attached to the station. To avoid any ill feeling which might result from a recruit's being rejected by him, the Assistant Surgeon here first re-examines, and if he should find the recruit unfit for service, is required to return him to the Rendezvous and report the defect found. Should the surgeon there still deem him fit for service, the recruit has to be referred to myself, who gives the casting vote after a third examination. But such is the strictness of the first one, that this is rarely necessary; and it is suprising, considering the excesses into which the recruits engage before their delivery on board.

For the marines enlisted on the Philadelphia station there is only one examination, which is made by myself or assistant, according to the time of the day when they present themselves. But all the candidates—as officers of the Engineer Corps—who attended the late examination here, had first to be inspected by me, and to get their orders endorsed with a certificate of their having been examined and passed physically. Of the first I made a general examination, with as little exposure of the person as possible, as they all

had a gentlemanly appearance; but having understood from a member of the Board of Engineers that one had been at a former session rejected for rupture, I was more strict with the last examined, and in addition to a written declaration of their soundness, which was read to them for their assent, I omitted nothing thought requisite to detect important defects, though on examination of the above candidate no rupture could be found, and he only had an unnatural depression of the sternum, which was not deemed a sufficient cause for rejection.

To the physical as well as mental qualifications of engineers, great importance is attached, as their duties are very arduous. They have to undergo great exposure to heat about the engines and fires; they labor hard—watch long and frequently—have use for the nicest and most accurate sense, especially of sight and hearing, in the detection of defective machinery, and are more constantly in active service, it is thought, than any other grade of officers. Acting on a knowledge of these facts, I was under the unpleasant necessity of rejecting three out of thirty-one for defective eyes; one person had a perfect opacity of the left one, and two of them were near-sighted. Nevertheless, one of these procured influence enough to be examined professionally. If, then, he should get into service, and from his inability to see a flaw in a steam boiler or other machinery, a disaster should happen, let not the blame rest on his medical inspector.

Of candidates for entrance into the medical corps

of the navy, physical perfection is also required ; and besides undergoing a satisfactory examination to ascertain that, each candidate has to give a certificate similar to the one quoted. That all persons interested may be fully aware of the requirements demanded, I will state that no one is professionally examined before he has undergone a satisfactory personal inspection, and signed this certificate of “Physical Capacity.”

Philadelphia, —, 1853.

“I declare on honor, that my health at this time is good and robust, and to the best of my knowledge and belief I am free from constitutional defects, and without any predisposition to epilepsy, phthisis pulmonalis, gout or chronic disease of any kind. I have neither circocoele, stricture of the urethra, hæmorrhoids, nor hernia. Each and all my organs of sense are without imperfection.

*“Candidate for the Office of Assistant Surgeon
in the Navy of the United States.”*

Had one of the candidates who appeared before the late Board of Naval Surgeons been aware, previously to his leaving home, that such a certificate as this was required, he might have been saved from the fatigue and expense of a very long journey from the West. That other candidates for the corps may not suffer similarly, their attention is called to these facts and to the following “General Order :”

NAVY DEPARTMENT,

February 1, 1854

1. Hereafter a Board of Surgeons in the Navy shall assemble annually at such place as may be designated by the Department, about the close of the lecture seasons of the Colleges, for the examination and selection of candidates for admission into the Medical Corps of the Navy, and the examination of Assistant Surgeons who may be candidates for promotion.

2. The Board will select from the qualified candidates for admission, such a number of the best as may be necessary to meet the demands of the service for the following year.

3. As vacancies occur in the Medical Corps of the Navy, appointments will be made from the qualified candidates in the order of succession in which they may be named by the Board; but no appointment will be given to any such candidate who is over twenty-five years of age.

4. No qualified candidates will be held over for appointment after one year, but all such must be re-examined, and take position in the class in which they are last examined.

5. Every candidate for admission will be examined, strictly and carefully, as to his physical capacity for the service, and the Board will make a separate report in each case, which will be forwarded *direct* to the Department, to be placed on file with the testimonials of the candidate. This examination will precede that as to professional qualifications, and no candidate who is not physically qualified will be examined professionally.

6. In order that the relative position of Assistant Surgeons of the same date, who shall be examined for promotion at different times, may be more readily determined, a majority of the members of the Board will be selected, if practicable, from those who served on the next preceding Board.

7. Assistant Surgeons, who are candidates for promotion, shall present to the Board testimonials of correct deportment and habits of industry from the Surgeons with whom they have been associated on duty; also, a Journal of Prac-

tice, or Case Book, in their own hand-writing. They are expected to be familiar with all the details of duty specified in the "Instructions for the government of Medical Officers."

J. C. DOBBIN,
Secretary of the Navy.

It may be likewise useful to state that candidates for the corps of midshipmen, previously to their admission to the naval school of Annapolis, must undergo a satisfactory physical inspection by two surgeons appointed for the purpose.

With regard to that of ordinary recruits, as seamen and marines, not so much delicacy is observed as with officers. Every man or boy is entirely stripped of his clothes, a close scrutiny is made of his whole person, and every question is put which may serve to detect natural or acquired defects. To enable the inspector to examine without making omissions, it is best for him to write down all leading questions; if he should not, he may fail occasionally, by omitting some, to detect serious defects—make the government or employers liable to imposition on account of injuries received anterior to entrance into service—and admit very useless and annoying persons, such as those affected with strictures in the urethra, piles, fistula, neuralgia and incontinence of urine while asleep, which on board a man of war or other crowded vessel is a great nuisance, from the foetid condition in which the clothes and bedding of the invalid suffering from it are kept. Equal annoyance may be occasioned by the foetid exhalations given off by the breath or feet of some individuals—and they ought to be rejected, though perfectly able to perform the du-

ties required of them—as they corrupt the air, and prevent others from the performance of theirs. To put the recruit at ease and compose him—for a young one is very apt to become agitated and nervous—affability and kindness of manner should be observed; and he should be questioned on general subjects, by which his sanity of mind may be learned, and that his general condition of health anterior to his application for enlistment may be discovered. When he has become composed he should be made to pace backwards and forwards in a spacious room, that the movements of his joints may be observed; kneel down, stand first on one foot then on the other, raise them to a horizontal position alternately, and cast each one backwards as high as possible. The hands and arms should perform like evolutions; the shoulder joints, clavicular junctions, elbows, wrists and fingers be inspected, to find out ankylosis and want of proper flexure, from this or luxation. The loss of a thumb or index finger, deformed feet, toes interfering with walking, varicose veins, signs of scorbutic and scrofulous affections, marks of large ulcers, white swelling, carious bones and deficient muscular development, smallness of size disproportioned to age, symptoms of anæmia, unnatural palor and sallowness, palpitations of the heart continued after the candidate's mind is composed, a very frequent, full and strong pulse in the same condition, I consider causes for rejection. But this, in the above instances and others, must be in a measure governed by length of service, mental or professional qualifications, and the specific duties to be done. A man who could not run aloft, up the

shrouds, furl a sail, or clamber up a ledge of rocks' and leap beyond an enemy's trench, might make himself very useful in working a gun or standing guard. The same remarks will apply to the merchant and militia service.

That no oversights or omissions may happen, I recommend system to be observed in examining the different parts and organs of every recruit, beginning with his head and descending to his feet; and that the inspector ascertain the healthy or unhealthy condition of his various tissues. His scalp should be felt, pressure made upon the cranium to discover depressed and deficient bones from fracture; the hair ought to be raised to find *tinea capitis* and other affections. The senses should be tested, particularly those of sight and hearing, the mouth and teeth inspected, the chest sounded, the abdomen, in its whole extent, be felt and pressed upon, the recruit made to speak, to find out whether he stammers, stutters, or has unnatural tone of voice; and when stricture of the urethra is suspected, he ought to be required to urinate or to undergo the introduction of a bougie.

But this and other disagreeable examinations are objected to by recruits, deter them from offering for inspection, and should never be wantonly performed. Even the nudity demanded of them is offensive to some, and I have known several to refuse to strip, and decline enlistment before they would submit to it. In examining the groins and genital organs, special care is to be observed that a rupture be not concealed by the hair, or being thrust up just before examination, and that a chancre or bubo, either forming, or

in the last stage of suppuration, may not be overlooked, or a gonorrhœa may not escape notice. In shipping boys and landsmen, who are mostly superabundant, and can be had at all times plentifully, the latter complaints are good reasons for rejection; but in men who are well drilled, or good sailors, who are always scarce, they are not so, and it is better that these should be taken and cured, if it can be effected in a short time. By such indulgence very valuable men may be got or retained in service, and kindness and humanity practised to those who have an additional claim on it from their good conduct and great efficiency. But in these cases the inspector must be in a measure governed very much by the certificates he has to sign—for they differ greatly in purport—and it was in consequence of the one used at the Philadelphia rendezvous, when I went on duty there in October, 1845, being too stringent and preventing me from exercising due discretion or indulgence, that I urged its revocation, and had introduced the present one, which simply states that the recruit—setting forth his name and rank—has been examined and found “fit for the naval service,” instead of stating that he is free from bodily defects, as is done in the certificate given each marine enlisted on this station. In many instances I have had the alternative of signing what was not true, as regards defects, or of rejecting desirable men; and to avoid this, I have had several times, with the assent of the commander of the guard, to insert exceptions by writing the defects forming them on the printed certificate. In consequence of such cases, the medical examiner may of-

fend the candidate, dissatisfy the person who wants his services, delay the formation of a regiment, or prevent the early equipment of a ship or squadron. For notwithstanding the change effected by me in the certificate at the rendezvous, I rejected between 10 and 11 per cent. of applicants, or nearly 200 out of 1828, examined by me while last on duty there—that is, including some examined by others while I was absent and on a Board of Examiners. The sum total of rejections in 2128 inspected there and at the Navy Yard was 240, or more than 10 per cent. Of these cases, sixteen were rejected for varicose veins of the legs, eleven for varicocele, twenty-seven for circocoele on the left side, without exception to the best of knowledge, eighteen had myopia, nine ophthalmia, six blindness of the left eye, sixteen imperfect forms, fourteen various cutaneous eruptions, nine diseased heart, ten debility from old age, &c., one was ruptured in the right groin, and nine had been in the left one. For this fact we cannot account, unless by ascribing it to the great expansion of the left abdominal ring—from the larger size of the left spermatic veins than that of the right ones.

Besides the complaints and injuries mentioned as just causes of rejection, we may enumerate contagious, pulmonic and cardiac affections generally, acute and chronic rheumatism and ophthalmia, diseases of the chylopoietic viscera, intestinal, herpetic and other cutaneous affections, secondary syphilis, bronchocele, epilepsy, palsy, spinal deformity or disease, intermittent or other fevers, great loss of teeth and caries of them, malformations of the body and limbs, debility,

great emaciation or exorbitant fatness, and in fine, *any complaint* or injury which might excuse a man from military duty, or be urged as a reason for his discharge from it or naval service, as it is very common for such men to get into it, to become dissatisfied and procure their return home or discharge because of these defects.

As has been shown above, of the recruits rejected by me, the largest number were affected with circocele of the left side, varicocele, varicose veins of legs, ophthalmia, myopia, imperfect forms and cutaneous eruptions. Of all examined, whether passed or not, a catalogue was kept and memoranda made, especially of those rejected, as after the lapse of a long time, and when it seemed probable that they were forgotten, some would make another attempt to get into service. Notes upon such persons are not only useful to the one who takes them, but to the officers who succeed or relieve him. These being unsuspecting and uninformed respecting defective applicants, might allow some to be enlisted who might prove incumbrances and nuisances, and utterly worthless, as well from ill-health and injury as from bad habits, especially that of confirmed drunkenness, which may have not only undermined their constitutions, but rendered them unfit for any kind of service, by the irregularities it produces, and the constant tendency it gives to violations of discipline. Concerning the utility of memoranda being kept it may be proper to add, that they afford good statistics of the height, age and diseases of recruits; and moreover enable the inspectors to identify those who have already been enrolled, have

failed to enter service at the expiration of their liberty, or, having done so, have deserted or been dismissed as invalids, and endeavor to get re-enlisted for the sake of another bounty or advance of wages. Two instances of such attempts at imposition have come under my own knowledge on this station; and in both of them my recollection of the impostors, assisted by my notes, enabled me positively to recognize them and prevent imposition.

CHAPTER III.

Naval Hygiene. Proper Modes of Constructing Vessels to Preserve the Health of Crews. Ventilation of Quarters for Patients. Imperfections in some Ships; Effects of their Motion on Persons. Conveniences needed for the Sick. Dispensary and Store-room. Vaccination. Frequent Failures at Sea. Effects of Cold, and impropriety of fitting out Ships in winter; Injury to Health from washing them. Water as regards Health and Disease, and means of Purifying it. Provisions; those of the Vegetable Kingdom and of the Animal; Means of Preservation. Medicines, Implements, Appliances, and Clothes. Disinfecting Agents commonly employed.

This embraces a great variety of subjects relating to the health of seamen. On it their strength, spirit and, necessarily, their efficiency depend; without it commerce must suffer, and in time of war the honor and defence of the country could not be maintained against a powerful maritime nation, whose seamen are as brave and numerous and more healthy than our own. It becomes us, then, to consider the means best adapted to prevent this, and, if possible, to ren-

der them superior in every respect. At the same time we do that we must not neglect to refer to the means suitable to preserve the health of our extensive mercantile marine. For these purposes the first means to be taken are those intended to procure vessels properly constructed regarding the comfort and health of their occupants ; for, if they be confined to small, filthy and ill-ventilated apartments, other means taken may be of no use. Ships of war are often built for sailing and fighting only, merchant ships for beauty and holding large cargoes. Hence, the quarters in both for the crews, and especially for the men and officers of subordinate grades, are very small proportionally to their number, besides being so constructed that pure air is nearly unknown in them. It is even common to witness this in vessels wherein the cabins and saloons, intended for the passengers and officers of the highest grades, are as spacious and airy as they can be made. In no class of vessels are we more struck with these facts than in packets and steamers. In the latter, engaged in trade between the eastern coast of the United States and the western coast of California, I observed this contrast in accommodations. While the cabin and steerage passengers were lodged mostly in separate state rooms and had sumptuously furnished saloons or cabins adjoining, the forward passengers were crowded in berths near the bows or about the forecastle. Some of them were occupied by two or three persons in each one, and were so short that no man of full height could lie in them at full length. To escape from such

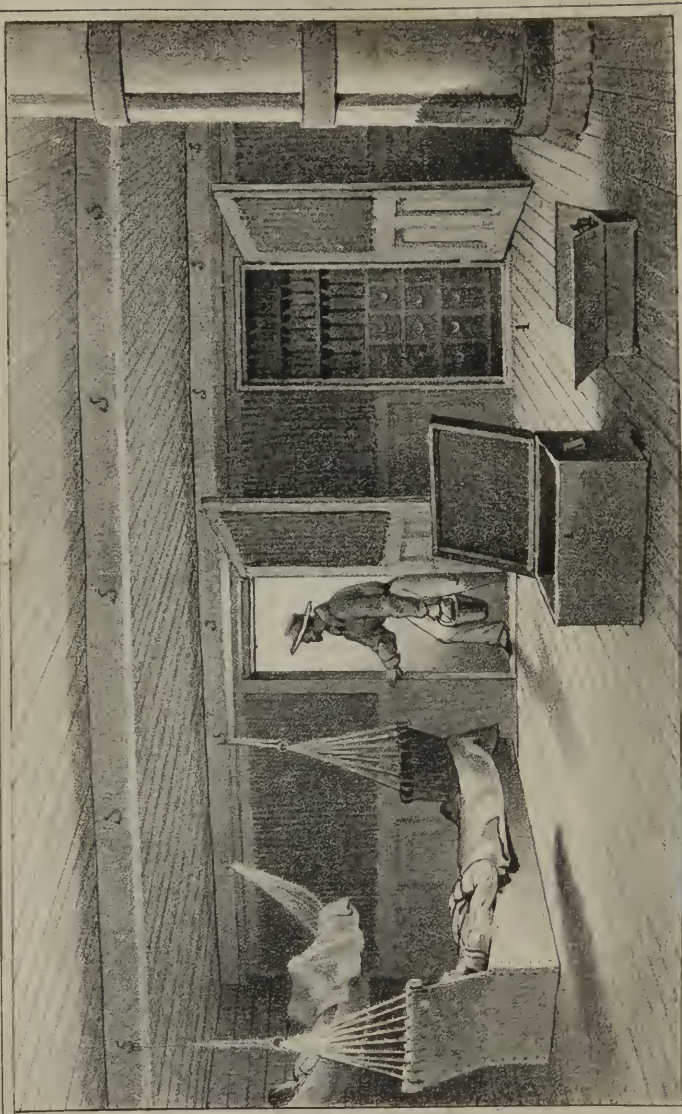


PLATE A.

Sick Bay of a Frigate.

1. Dispensary.
2. Cot for the Sick.
3. A Hammock.
4. Chest for Surgical Instruments and appliances.
5. A Moveable Tray of the Chest, for small articles, and
lined like it with baize.

canvas, open at bottom and expanded at top into a capacious mouth, presented to the wind, and held open by lines attached to their elongated sides. Hoops within prevent their collapse. These windsails are suspended from the rigging by other lines, and can be let down through the hatches far enough to ventilate the lowest parts of vessels. All those of our navy are thus purified, and made vastly more healthy and comfortable than ships were before the introduction of windsails.

But the part of every vessel most demanding the care of the physician is that used by the infirm, and known in men-of-war as "the sick bay." In those of our country it is almost without exception on the berth deck, either in the bows or amidships between the fore and main hatch. The former place is its location in ships of the line, and frequently the latter is that in vessels of smaller size. In our steamers the machinery will not allow of the sick being kept amidships, and abaft there is no room for them; hence from necessity they have to remain forward. This is the case even in the *San Jacinto*, one of our largest steam frigates, and more than 220 feet long. She indeed has no separate place for the sick; they have to lie near the fore hatch of the berth deck, and are exposed to both the heat of the galley or cooking range just abaft them, and to the intense fires in the adjacent furnaces generating steam, in the hold below. She has no gun deck or other place of refuge (save the spar one) from such heat, for the hale or sick, by day or by night; and if it rain, or the weather be cold, or the wind strong, they have the unhappy al-

ternative of bearing its chilling blasts, or of closing the hatches and being stewed in steam. From the description by the crew of what they suffered from these causes—the flooding of the berth deck by the sea through the hawse-holes at the bows of the same deck, the deluging of it by rain, the seas shipped and the water thrown upon it in the coldest weather to clean it—we can rationally infer, that though she cannot be called a floating hell, she might well be termed a steam purgatory. That the above is a just remark, I will add, that it is stated that during her late experimental cruise of a week, the thermometer on the berth deck stood at 126° , and the heat was so intense in the engine room as to cook an egg within three minutes, although she was going at the time only $4\frac{1}{2}$ knots per hour, from which fact we infer she could not have had fire enough to raise the steam to the highest point of heat her boilers could bear. One of the officers informed me that he thought the heat of the room was about 170° when the egg was cooked.

In the English ships of war I have visited, the sick were placed on one of the gun decks and on both sides, or only on one of the bowsprit. This position is most desirable from its being generally the least in the way; but when the men are letting out or heaving in a cable, or the ship is in a heavy sea, plunging deeply and buffeted by waves driven on by a head wind, it is very noisy, and often deluged by the water forced into the ports, seams and hawse-holes, or those through which the cables pass. The motion, too, in the bows of a vessel, is very great at such times, and renders them altogether unfit for patients ill of low

fevers, from the depressing effects on the brain ; or for those who suffer much from sea sickness, or who have fractured limbs. In these cases, while ships are at sea, it is always necessary to remove the patients abaft, and I usually place them near the middle of one of the gun decks. While I was in the John Adams, on a voyage from Minorca to Naples, thence to Marseilles, and back to the former port, a most striking instance occurred of the ill effects of a ship's motion on a case of the first kind, or that of low fever. The patient was a boy of that island, for the first time at sea, who suffered from excessive sea sickness and intermittent fever, to which he was liable. Accordingly, as the wind was light or strong, the sea smooth or rough, the ship in port or out of it, easy or uneasy, so the type of the fever was of ordinary height or of the lowest kind, and deprived him of nearly every sign of animation. When thus affected, his teeth were covered with dark sordes, his eyes sank, his pulse was rapid and scarcely perceptible, his face livid, and he sank into such a state of insensibility, that he was only to be kept alive by quinine, applications of turpentine and cantharides ointment, and other stimulating remedies. In this manner he lived until he got back to his native place ; but when she was about returning to Naples, he could not remain in her, was sent to the Lazaretto of Port Mahon, and there died under the charge of a Spanish physician. Reference has been made to this case in my work on the Mediterranean ; but it has been again introduced, as it is finely illustrative of the bad influence of a ship's motion on some patients.

To make the sick more comfortable, it is also very essential that they have a privy convenient to them, and are as little as possible exposed to being struck by the sea, and that they should have well made and covered easy chairs with copper pans, which are difficult of being broken, and require a long time to become corroded. Porcelain pans are too easily fractured, and tin ones very soon are rusted and rendered useless. A hatch directly over a sick bay is of great advantage; it affords plenty of light, admits a wind-sail, enables the medical officers and patients—both those affected with disease and those injured by accident—a ready way of egress and ingress. When there is no such hatch, and a person is severely injured, it becomes necessary to drag him during sleeping hours beneath the hammocks of the crew to get him into the hospital. To do this is difficult and painful to him and carriers, from the hammocks being hung only a few feet above the deck, and obliging the latter to stoop very low while they drag the former. Another great convenience is that of having the dispensary and store room adjoining or near the sick bay, so that articles can be had for patients without delay. But in time of war the greater part of medical stores should be below water mark, and secure from damage by an enemy's shot. A single one, and especially an explosive shot, might otherwise smash all the bottles of the medical department and leave no liquids for use. This misfortune might frequently happen in our men of war of the present time, for in all of the corvettes, and in most if not all our frigates, the dispensary is on the berth deck. In former times

it was in the cockpit of the last, and below water mark. Want of air and light, and the inconvenient distance of the former from the sick, have probably caused the change of place, besides many annoyances from the numerous store rooms opening into the cockpit, and its proximity to the spirit room and after-magazine. While these are open no lights are allowed to be burnt, and of course the darkness prevents the compounding of medicines and other work being done. When they are immediately required, this is a great inconvenience to the sick and their attendants. In time of action, or any other, when the crew are at quarters, the wounded or injured sent to the cockpit must receive attention, and the use of covered lights is then permitted.

With a hospital arranged as above described, patients, unless over-crowded or affected with contagious diseases, will mostly improve under judicious medical advice. Should any be affected in the last manner, they ought to be forthwith sent on shore where it be practicable, or placed in the most airy and least frequented parts of the decks, either lower or upper. There they should be hung in cots, or hammocks, if there be none of the former to be had; put behind screens, and allowed to hold no communication with any other persons than their nurses and physicians. If small-pox exist it will be very desirable that the former should have had it by inoculation or naturally, or that they be known to be well protected by vaccination. But, should this sovereign preventive have been properly practised among a crew before or after shipment, it is very improbable that they will ever

become extensively infected with small-pox. Therefore, every one of a crew in the least liable to it should be vaccinated as soon as he gets on board ship, and while the vaccine matter can certainly be obtained fresh. If it be not it will prove useless, according to my experience ;—for, of the many hundred persons I have vaccinated or caused to be, in various ships of war at sea, scarcely one gave any evidence of having been infected with the virus. The same remark was made by a surgeon of much greater experience than myself. So many failures may have been owing to other causes, as gross diet—the adult state of a great majority of the crews—and their greater unsusceptibility to impression from the hardness of their skins, and loss of sensibility. Some may ascribe the failures to the influence of sea air, but none of these things are known to be facts. This, however, is an acknowledged and well proved one: old vaccine matter has often failed to produce its peculiar effects on persons ashore with every adjuvant required to insure success. Neither the purest air, nor best diet, nor well adapted clothing and most able medical advice have been of any service. The punctures have, notwithstanding, healed and left no cicatrices, and the vaccinated have remained unprotected from variolous contagion. To escape it in very cold weather is most difficult, from it being necessary then to make vessels of comfortable temperature ; from their crews being thickly clad, and seldom changing their clothes ; staying much below decks ; crowding together in warm places ; closing ports and hatches, and stopping ventilation. When this cannot be done,

they become exposed to too much cold, suffer from pulmonic complaints, rheumatism and chilblains, and hence have a choice of the two evils—contagion, or the suffering caused by these affections. Sometimes a ship may be kept very close below and open above, as was the Brandywine in the winter of 1830, at New York. To that fault we ascribe the complication of the above diseases there suffered. In her were mingled cases of small-pox, scarlatina, typhus fever, and every other affection it seemed which could be induced by intense cold. Luckily some of the former cases were sent to the naval hospital before the crew were extensively infected. But by the time the ship left port, in March, she had lost one man from scarlatina, sent thirty altogether to the hospital, and had forty more on the sick list. In a few days after sailing, three more persons died of the same disease and typhus fever, and in the course of a few months others of the crew had been similarly lost. Among them was the sergeant of marines, Clargis, a noble looking, accomplished soldier, who had had a violent pneumonia terminating in mortification of the lungs. His sufferings were indescribable; so great and protracted were the dyspnœa and difficulty in expectorating the exceedingly foetid sputa which for day after day were discharged, to the disgust of the whole crew.

So much was due to the fitting out of a man of war in winter! a practice ever to be condemned or avoided. There are two other practices in ships almost as condemnable; one is, that of dry *holy stoning*, or rubbing the decks with huge stones and sand; the other practice is that of deluging the former

with water in the coldest weather, even when it freezes as soon as thrown upon them. Dry holy stoning is intended solely for good appearance and cleanliness, washing decks for the same purposes and to keep them tight. In doing this the men generally go barefooted, and suffer proportionally from the conjoined ill effects of cold and moisture, inducing rheumatic and pulmonic complaints. By holy stoning the chief mischief is done to the eyes and lungs, which inhale the impalpable sand floating in the air, and become irritated. To this cause is attributed the death of the master-at-arms belonging to the vessel named, and who became affected with phthisis pulmonalis. Cases of ophthalmia arise and are aggravated from the same cause. But when the sand is wet it may be rubbed on the deck without injury; and in mild weather washing them does little harm—unless on the lower ones—from their continuing wet a long time, and may be of advantage, from the men getting their feet cleansed, who, if the decks were not washed, would seldom have them so. To obtain a like condition of the whole person, bathing in fresh or sea water should be practised by a crew, whenever it be of moderate temperature. Though buckets and tubs sufficient could not be had for a large number of men, they might bathe on a beach, or at sea, by having boats rowing about them and letting down sails into the water by the four corners for the use of inexperienced swimmers, as I have often witnessed, when the sea has been calm. Bathing, besides being a very healthy practice, from its tonic and cleansing effects, is a fine amusement, and for this reason, if no other, ought to

be encouraged. Like music, dancing, playing at dice, chess, draughts and dominoes, it takes away the monotony of sea life, makes time pass pleasantly, and creates good will in a crew. But water is far more important for drinking than bathing; and unless it be pure, it is vain to expect good health in any vessel on a voyage, and cut off from the means of procuring substitutes when it is impure. When good, it is the only drink seamen can use freely with general impunity; and nothing laid in for their sustenance makes them so efficient and so comfortable. It is an indispensable article with them, and one for which no substitute can be found. This is not so with any other; if the pork be bad, the beef may be good; should the bread be mouldy and wormy, the rice may be sound; if the cheese be spoiled, an additional quantity of butter can be allowed. The same may be done with any other part of the rations. Bad water, too, may be as injurious in port, and sometimes more so than at sea, when sailors at the same time indulge in eating fresh meat, fruits and vegetables, especially the crude, unripe and acid ones. If these be eaten at the same time that brackish water is drank, or that obtained from fountains and rivulets just after heavy rains, and charged with earthy matter, they never fail to produce bowel affections. The greatest number which have ever come under my notice have been caused in this manner; and I always expect as a matter of course, when between the tropics, or it be summer anywhere, to have at once a large number of such affections to treat. But by far the largest number have been seen among crews drinking the water of

the La Plata, or that taken from its shores. Neither should be used before it is purified by being allowed to work, or by strainage, or throwing into each cask a small amount of powdered alum, which is thought at Buenos Ayres the best purifier, and ought to be proportioned to the quantity and impurity of the water. For the consumption of a small number of persons, dripstones may furnish as much pure water as they may need for drink; and in the Mediterranean, from the vast quantity of porous sandy limestone found on its shores and islands, these stones can be easily obtained at a low price. At Malta they are very plentiful, and so cheap, that every vessel touching there ought to lay in a supply for both present and future use; for after they have been used for some time, the impurities of the water strained fill their pores and impede its flow, so much as to prevent this being abundant. Should a crew be large, other means must be adopted, and none answer so well as large casks, set on end like a common scuttle-bat, and having either a strainer at bottom made of several layers of bunting or of hair cloth, resting on a grate and covered with gravel and sand; or having a patent strainer of silver gauze, with a clean sponge fixed inside of it. The frigate *Savannah* had a strainer of the latter kind, which was attached to the scuttle-bat when necessary, and was thought very good. For the use of my patients in the *Delaware* I employed a strainer of the former kind, holding only five or ten gallons of water, and for the same purpose in the *Savannah* used a large stone filter, which had a double bottom and a chamber above, with a hole in

the centre into which a sponge was placed. The water ran through this, thence percolated through a layer of sand and a strainer beneath—got into the lowest chamber and was drawn off by a stop-cock in a limpid, pure condition. For a sick bay I prefer this filter* to any other, from its convenient size, easiness of being cleansed and repaired, and so well answering the purpose for which it is designed. Other filters perhaps may be obtained to answer as well, and there is no excuse for a vessel leaving, at least any of our ports, without having some of them. In steamers there is less demand for them, from the great ease with which their immense fires can, by means of retorts or alembics, convert salt water into fresh. Whether water thus distilled is as wholesome as that impregnated with some saline or earthy matter, is a subject of doubt, as in some persons it has caused diarrhœa, and, moreover, when so purified, is insipid and unpalatable.

Of the best methods of preserving and purifying water, much has been written. Some have recommended a small amount of quick lime and sulphuric acid to be put in each cask; some have used muriatic acid, others calcined lime or pure charcoal, with a little sulphuric acid; others have put in powdered charcoal alone, or charred the casks inside. This is a very common method of purifying them when old, and though it may not have any great efficacy in preserving the water, it certainly has some in preventing

* It is said to be one of Wainwright's of Staffordshire, England, which have gravel and charcoal mixed with the sand, contained in the middle or closed chamber.

the decay of the casks. The charcoal itself, likewise, when put into the water, acts both as an antiseptic and destroyer of foëtor arising from the formation of sulphuretted hydrogen. But I prefer filtrating impure water through charcoal, when confined in a chamber or other place suited to hold it and prevent its rising to the surface, as its lightness will certainly cause it to do when thrown loose into the water.

Provisions.—Such a variety of them are now used at sea, that it would be superfluous to enumerate them or do more than write a few remarks respecting some of the principal. Of these the two most used are bread and meat. The former in all ships is commonly biscuit made of wheat flour,—sometimes of this and rice mixed, when the former is very dear, as in Brazil. The hardest bread I ever saw was obtained at Bahia, and was said to have been thus made. It was too hard for any ordinary teeth to chew, and required hammering to be got into fragments. It is hardly necessary to say that such bread, and the wormy, mouldy and sour, should be condemned. Indeed biscuit generally is difficult of mastication and digestion, from its toughness, and is neither savory nor wholesome, unless dried and crisped in an oven just before it is eaten. Next to bread, rice may be ranked as the most valuable vegetable food. Though it be insipid, and constipates most persons, it can be easily rendered palatable by seasoning, and prevented from producing costiveness by mingling it with stewed fruit or molasses. For the sick I have found rice invaluable in bowel affections, either in the form of a

gruel or drink, or when simply boiled and flavored with any pleasant condiment. In this state my patients, almost without exception, have preferred it to arrow root or any other of the farinaceæ, which have a flatness of taste—to be overcome only by high seasoning with wine, sugar, lemon juice and spices, rendering them as rich as prohibited meats. Of these, any which are preserved by being first cooked—by boiling or roasting—are to be preferred for the sick or well, to all dried ones, or any preserved by being put into brine, either of salt alone or that and nitre. Both of these articles so impregnate flesh of all kinds as to make it hard and insoluble in the gastric juice. It then creates irritation of the stomach, causes unnatural thirst, and is altogether difficult of assimilation, besides impregnating the system with a superabundance of saline matter. The first ill effects observed afterwards are ulcers in the mouth, phlegmons in different parts of the body and limbs, and finally scorbutic symptoms. Therefore, to avoid these and other evils resulting from salt provisions, as little of them as possible ought to be used, and when they are, they should not be cooked before they have been first soaked at least twenty-four hours in fresh water, and subsequently washed in it after it has been changed. Preserved fresh meats are dear in appearance, but if we calculate their superior niceness and wholesomeness; their freedom from bone, gristle and other useless parts; their not requiring more fire than enough to rewarm them, and the very little space occupied by the canisters containing them; the very perfect manner in which these meats are kept sound

for an indefinite time, and the vast amount of salt meats lost from corrosion by the brine, and putrefaction from various causes, we may very safely conclude that the latter meats are dearer than the fresh preserved. On the coast of Brazil, where these cost 45 cts. per pound, I found them decidedly cheaper than live fowls at six dollars per dozen, from the great mortality among them at sea. Even when these do not die, they often became sickly, wasted away, and afforded poor nourishment. The same may be said of other live stock, save, perhaps, pigs; and when not correctly, it is in rare instances,—from fine weather and great care in feeding. When this is not done, they are illy watered—the vessel labors much, tosses them about and keeps them wet; they soon droop, get feverish, and become unfit for use by the sick or well.

With fresh preserved meats we must likewise recommend vegetables which have been cooked in a similar manner and hermetically sealed in tin cases and bottles. There are also a large quantity of vegetables now reduced by heat to a very dry state and sealed in tin boxes, but when taken out and put into boiling water, resume their wonted freshness and plumpness. The best I have seen were prepared in France, and sent to Purser William Sinclair, the worthy Chief of the Bureau of Provisions and Clothing of the Navy, for inspection and trial. They give such satisfaction that we hope they will come into general use and be prepared on a large scale in our own country. In addition to the above articles, preserved soups, custards and milk ought to be laid up for sea stores, at least for short voyages,

as is now practised in some packets. By the aid of ice it may be easily effected, though the articles be not put in sealed vessels. In ships sailing from countries where ice abounds, it might be stored away at a very low price, in sufficient quantities to last for months, without any great inconvenience as regards room. On my passage in the *Crescent City* from Chagres, all our meats were said to have been preserved on ice laid in at New York, abundantly enough to last both during her outward and homeward passage. Of spirits, wines and malt liquors, it is necessary to procure a supply for culinary and medicinal purposes. Habit, too, renders them requisite for some persons, and the palates of others may make them indispensable as articles of luxury. But for the treatment of invalids, I have always found them of minor importance with respect to articles decidedly medicinal. As diffusible stimulants, in cases of emergency, they are serviceable ; but as tonics or medicines, used to produce a permanently invigorating effect, they are much inferior to the vegetable bitters, and if any stimulation be required, it is much better to infuse these in a small amount of spirits mingled with water. This also is preferable, because it prevents patients from having it in their power to say that the "doctor recommended them to drink spirits," and to urge this as a plea for their continuance when well.

The next subject claiming our notice, and the most important to the sick, is the laying up of all the medicines, implements and appliances needed for them. In their selection we must determine how many are

needed, and next the quantity of each one which may probably be required. In determining this we must be governed by the space allowed to accommodate them, the number of the crew, the length of the proposed voyage, and the amount of sickness anticipated. The ability or inability to procure a re-supply where the vessel is bound, and the abundance, cheapness or dearness of certain medicines there, ought also to regulate the quantity to be primarily obtained. It is very bad economy to fail getting a full supply of articles which are exorbitantly high abroad, and equally bad to lay in such at home when they are perhaps native products of the countries to be visited, and correspondingly cheap in them. This is a familiar blunder, and committed in many vessels; and the only good reason for it is that it encourages domestic commerce and causes money to be expended at home. While laying in medical stores also, we ought as much as possible to obtain the most efficient of every class—to get them in the most concentrated form, so as to occupy the least space—to put aside crude articles and procure their active principles—and to have all medical stores, whether in drawers or boxes, well secured against rats, mice and vermin, by means of tin or other metals, and to have these well painted externally, to prevent corrosion by rust. The medicines likewise should be put in packages and bottles, perfectly air and water proof, and adapted in shape to the places wherein they are to be kept. As a general rule, the former store most conveniently and take up least space when square.* It will be found in fitting up either a medicine chest or a dispensary,

that when round they require about one-half more room—a vast deal to lose when not enough is allowed, although storage is made in the most economical method. One of the strongest objections to laying up an overplus of medical stores, or not packing them closely in a dispensary or chest, is that it makes it necessary to put the surplus in the hold. When this happens, they are apt to be lost and pillaged; they cannot be got for immediate use without inconvenience; and give so much trouble to those having charge of the hold that they complain, and quarrels result between them and the persons belonging to the medical department. From medicines being kept in the hold I have frequently, under the belief that there were none of a certain kind in it, obtained a fresh supply, when an abundance was there, as proved by their having been subsequently found. On one occasion I was positively informed that no alcohol and Epsom salts were in store; a re-supply was ordered and purchased, and after it had been brought on board, four gallons of the first article and a barrel of the other were discovered in that part of the hold called the spirit room. The prohibition of lights in it makes such oversights more easy; but in the latter instance it was attributed to the inscription on the head of the barrel having been covered with white-wash.

In procuring medical stores, we should likewise take into consideration the climate wherein a vessel will have to cruise or remain longest. Accordingly, if the climate is to be a cold one, we ought to lay in a full supply of all articles adapted to the treatment

of rheumatism, pneumonia and other affections caused by cold. If the climate is to be a hot one, we should get an extra supply of mercurials, opium, saline compounds, acids and other remedies suited for miasmatic fevers, dysentery, diarrhœa, cholera and affections incidental to warm latitudes. In temperate climates, when we are to have an alternation of heat and cold, as in our own, we must of course obtain a supply of medical stores adapted to both. The same ought to be done in regard to clothing, and seamen of every class should be provided with such as may enable them to be well protected in any change of weather. From a want of information concerning the dampness and chilliness of that on the coast of California, it must have happened that a large amount of summer clothing was sent to our squadron there, instead of winter clothes, and occasioned great discomfort to the seamen during my stay on that station. For hot weather linen is most comfortable, but cotton is preferable, from its medium quality between the former and woollen goods, as well as for the much greater quantity to be bought for the same money. Cotton, also, does not, like linen, allow perspiration to be suddenly checked, or to the same degree absorb perspiration and remain sodden with water. Hence, muslin sheets are infinitely superior to linen for sea use. For overcoats, in frigid regions, woollen cloth is indispensable, but in rainy, gum-elastic and oiled are preferable, from their lightness and superior impermeability. In sultry latitudes, the last named is to be preferred to the second, from its being both waterproof and not adhering together so closely when one

part touches another that it becomes inseparable or cannot be drawn asunder without being torn and spoiled. A vast amount of gum elastic cloth is thus ruined. From its neatness and flexibility, however, it is an excellent article for mattress covers, counterpanes, capes, coats, cloaks and pantaloons in damp and mild climates, and may be very useful in the most sultry, when care is taken to keep apart the different folds and prevent any portion of the side on which the gum is spread from touching any other, when the articles are laid by and not in use. Considering how much these waterproof clothes contribute to comfort and health, it is wonderful that they have not yet come into general use for sailors, and that none are provided by Government for them. They make much less use of gum-elastic shoes, which are so much worn on land, and so indispensable in keeping the feet dry. When gum-elastic overshoes cannot be got for this purpose, an excellent substitute will be found by wiping off all dirt and blacking from shoes or boots, and then several times smearing them with a composition of gum-elastic clipped to pieces, softened with pure spirits of turpentine and dissolved by boiling in whale oil or some other animal one. For the soles, several coats of copal varnish will answer the same purpose; and this is to be preferred, from its giving them greater firmness and durability.

Besides the ordinary articles of the *materia medica* to cure disease, we have to get a supply of others to prevent it, or those termed disinfecters. The most commonly used, and one of the most efficacious is chloride of lime, but it is objectionable from its great bulk and weight proportioned to the amount of chlo-

rine it contains, and from its deliquescing when exposed to moisture. The other chlorides, as those of zinc and lead, are therefore preferable; but for instantaneous disengagement of chlorine I prefer the mixture of table salt, sulphuric acid and black oxide of manganese in due proportion—that is, having three parts of this to four of the first article and four of the second one, diluted in four parts of water. Sulphuric acid, also, poured on nitre, disengages a large amount of disinfecting gas or nitrous acid fumes, and constitutes the famous one of Dr. James Carmichael Smith, of Dublin. The proportion is a half fluid ounce of the acid to two drachms of the salt. The burning of sulphur and nitre together, the fumes of gunpowder, tar, tobacco and vinegar, and white-washing with slacked lime or chloride of lime, may likewise be useful; and we may employ Labarraque's solution of chlorinated soda, which is certainly good to destroy the foetor of sores and wounds. We also may use Sir William Burnett's solution of the chloride of zinc, and yet not have a healthy ship, if she be not cleaned, particularly in the hold, where such accumulations of noxious substances collect. No disinfecting agent could be got to counteract their deleterious action on a crew, and all the patent air pumps which could be worked by them could never throw out of a ship thus loaded with filth all the poisonous gases generated in her during a long sojourn in a hot climate. Nor when small-pox or any other truly contagious disease is prevalent on board, can we trust exclusively to any such means for disinfecting the air in a vessel, and rendering it innocuous, as well as inoffensive to our senses.

CHAPTER IV.

Diseases of Seamen. Abscesses ; Phlegmons ; Cases of the former ; Treatment observed generally for their Cure. Good and bad effects of Mercurial Medicines.

In our preceding remarks we have spoken of the means of obtaining healthy and capable persons for sea service, and of the best methods of keeping them efficient. Many may be kept so, but in spite of all precautions, some cases of disease or injury will certainly occur among them, it matters not how small a crew may be. When it is large, on a long voyage, we must expect a corresponding increase in the number of disabled. It has appeared, then, that it might be useful for me to give an account of the diseases and injuries I have met with at sea, and of the curative means adopted, but chiefly of those which have been found the most efficacious, without undertaking to give a learned treatise, either on new or old remedies, and entering into a long disputation on the theory of the diseases, and the many modes of practice recommended since their first discovery. The reader likewise must not be disappointed, if he should find omitted many of the nice distinctions now made in their names, and which serve to create confusion and obscurity rather than to elucidate the nature of diseases. Pedantic terms may sound melodiously, and yet fail in sense and imparting knowledge either respecting the manifold diseases to which the human race is liable, or the multitude of remedies used for

their cure. For this reason a grand display of Latin prescriptions, setting forth long lists of medicines, puzzling the writer as well as reader to remember well, will be sedulously avoided—not only for this reason, but from my want of belief in the efficacy of making such heterogeneous compounds, and from my preferring simple remedies.

After these preliminary remarks, I will observe, that although, as is well known, seamen are subject to the same diseases and injuries as landsmen, they are often modified by their peculiar mode of living. Seamen work, sleep, eat, drink, and dress differently from the former. At sea this happens from necessity; on shore from habit. The floating, peculiar structure of their ever-moving habitations, also produces changes in the disorders and injuries of seamen, and hence we find them varying frequently according to the class and state of their vessels, the general management of these, and the weather or climate where they are; yet, when any one disease becomes epidemic in a ship, at the same time that it commonly spreads with rapidity, from the crew being as it were imprisoned together, and it not being possible to perfectly separate the sick from the well, the type of the disease will be found very much alike. This will be rendered greater by their similarity of living, as respects food, drink, clothes, and other modifying causes. From the impossibility of flight, when an infectious or contagious complaint occurs in a vessel at sea, and far from port, all in her, except a few who may be protected from the disorder, know their liability to being attacked, are not so susceptible of being seized with a panic as people

on shore, soon become accustomed to the danger, and resigned to whatever fate awaits them. Familiarity, too, with dangers from other causes blunts a sailor's sense of fear, and though his limited views into futurity should not make him a predestinarian, he suffers whatever evil befalls him with singular resignation, and meets death without fear. Hence I never knew this to kill a sailor, nor one to be accused by his physician of having died of fright. On the contrary, sailors bear disease with patience, meet death with philosophic complacence; and if they get well, pursue their erratic occupations and dissolute amusements with no apparent compunctions of conscience. Though they may read some of the numerous bibles distributed by societies in every vessel, and attend divine worship with great decorum, they are apt to do the first for pastime, and the last from the mechanical effects of discipline. The sacred books being put down, the service at an end, they become as reckless as ever, and think no more of what has been read or heard. When death at last is impending, they may take the medicines prescribed, from respect and obedience, but may care so little about death as to reject them, as I once saw done by an old sailor named Michael Leopold, dying of diarrhœa, caused by his being entrusted with a bottle of dissolved tartar emetic prescribed by the surgeon for a chronically enlarged testis. When he had been excessively prostrated, and the clammy sweat of dissolution was upon him, he cried out that "he was dying, and he was glad of it." "Take that brandy-toddy away," said he, "I will have none of it, for when I wanted it you

would not give me any." Thus the old man died without further medicinal aid, and striking every person present with amazement at his refusing what no sailor was ever before known by me to reject in any shape whatever; for every one believes in the sovereign efficiency of grog. Internally they think it possessed of wonderfully healing powers—even greater than that of tar to any hurt, or of that panacea, brown soap and sugar, for an application to all boils, swellings, and external affections generally, whether the result of disease or injury.

I will moreover observe that the former complaints were some of the most common to which I found sailors liable; that they were of every grade and varied from the smallest boil to the most aggravated phlegmon, partaking occasionally of a carbuncular character, involving all the tissues of the skin, and resting on the investing fasciæ of the muscles beneath. When this occurred the local inflammation occasioned great pain and febrile symptoms, the patient was unfit for duty, had to be taken on the sick list, and undergo regular treatment.

The same had to be done in cases of less severity, and which were attended with only local symptoms, either from their disabling the affected parts, interfering with the proper use of the limbs, or it not being possible, while the patients were performing duty, to treat them conveniently. In cases of all kinds, these phlegmons could not be regarded as of local origin only, and in their treatment it was necessary to regulate the diet, forbid gross, crude, irritating ingesta, and to administer medicines internally to expel them,

and restore the system to a healthy state. Saline cathartics were sufficient, usually. Severe cases required magnesia alone, or with epsom salts, or rhubarb internally, at the same time warm linseed poultices were applied, until suppuration had occurred, the phlegmons had come to a point, and then they were lanced so freely as not only to disgorge the cysts, turn out the hardened sloughs or cores in the centre, but to cause a copious effusion of blood from the parts surrounding the cysts. Afterwards, the poultices were renewed and reapplied until suppuration was complete, the parts had become soft and pale, and the pain subsided. The poultices were then left off, and some mild, soothing, astringent lotion used. A solution of the acetate of lead, in the proportion of a half drachm to a half pint of water, was commonly prescribed. Sometimes this lotion was introduced into the poultices to soothe the skin, and prevent a great extension of inflammation. Care was taken also to procure if possible flaxseed meal of good quality. In some places this cannot be obtained, and at Gibraltar the best that could be bought, instead of being soft, oily, and nearly white, was in cakes, hard, dry, dark, and like sawdust. Such flaxseed meal is said to be obtained from the seed after the oil has been entirely abstracted by heat and pressure, and is unfit for poultices. Better ones can be made of ship's biscuit, steeped in boiling water, and mingled with a little grease or oil, when sweet. If in port, fresh bread, made into a mass with milk, may be more convenient, and make a better substitute for a good linseed poultice; or one of mashed potatoes may be prescribed when bread is too

dear, or cannot be had. For some phlegmons likewise an excellent poultice may be made by pouring boiling water on the inner bark of the red elm, after it has been cut or ground into small pieces. When thus prepared it becomes very pultaceous, soft, adhesive, and soothing.

Similar treatment to the above proved best in many other superficial affections, either of a local or general character, and arising from idiopathic or symptomatic causes. Local treatment was seldom alone adopted, and constitutional was never neglected when there was reason to believe the local disorders were mere signs of general ones, as was found in many eruptions, abscesses formed in the cellular substance of the axillæ, or about the lower part of the rectum, or beneath and at the root of the finger nails, constituting felons or whitlows. To these I have found seamen as liable as seamstresses, and have no doubt of their arising often in them from depraved digestion and bad diet, as well as local injuries and too great use of their fingers. During my late cruise, numerous cases of this kind happened at the same period that phlegmons were prevalent; and in one day, there were three admitted on the sick list for the former. A like treatment was followed, and as soon as the poultices applied had induced suppuration, free incisions were made into the cavities formed, to discharge their contents, prevent these from travelling beneath the nails, tendons and fasciæ, and producing caries of the bones, as I have witnessed. In one instance, those of a middle finger became so diseased, and caused such fungus in the joints and soft

parts, as to oblige me to amputate it at its junction with the metacarpal bone. From time to time similar abscesses were met with in the feet, beneath the fasciæ and tendons of the soles, and were also cured by following the above practice of poulticing first and then making free incisions. But one of the most remarkable abscesses ever seen by me, was occasioned by a chronic rheumatism in the left hip, buttock, and adjacent parts. The person affected was a gigantic seaman, a blacksmith by trade, of the name of Henry Fry, who got the above affection by exposure in the Brandywine at New York in 1830. After he had suffered considerably there and while she cruised, he returned to the United States, and became armorer of the John Adams early the next year. During her cruise in the Mediterranean, he suffered greatly from pain in the parts—principally in the left hip and buttock, extending along the course of the sciatic nerve; used friction with vol. liniment, and wore a Burgundy plaster on the parts. Other local remedies were used, and in the middle of January, 1833, he was taken on the sick list, being no longer able to perform his duties. The skin over and about the left trochanter major was of a dark brown color, and much indurated. He was unable to stand, and limped; but both of the inferior extremities were of natural size, and his general health was good. Low diet, a poultice to the indurated parts, and a dose of calomel and jalap were directed. The next day 20 leeches were applied, and the poultice continued. On the 18th, suppuration and ulceration had occurred; a fistulous orifice was formed over the lower part of the

trochanter, and a probe was passed two inches and a half into the abscess. This increased rapidly, extended upwards and backwards, until it involved all the left buttock, and formed a number of other fistulæ above and below. One also broke out over the hip joint, and a scrofulous affection of it, as well as a lumber abscess, were suspected. The purity of the pus discharged, its freedom from flocculi, the general absence of the marks indicative of a scrofulous diathesis, forbade such a conclusion; and the treatment was modified accordingly. It varied exceedingly, from the many turns the disease took. Sometimes he was only locally affected, at others he was feverish, and was prescribed for accordingly, both local and general remedies. He took a number of blue pills, at intervals of one or more days; doses of Epsom salts and seidlitz powder, or rhubarb and magnesia in the morning; and had a solution of five grs. of the nitrate of silver in \mathfrak{z} i. of water, injected into the abscess, to cause adhesion of its sides. A seton passed through two of the fistulæ, was used for the same purpose, and efficiently; the latter were repeatedly scarified—several incisions were made through the integuments, and finally, one almost a foot long was extended vertically down the buttock, to the back part of the trochanter, and in a line with the former. The gash was an enormous and frightful one—the parts divided were more than an inch thick; and had I known, before beginning, the extent of the abscess, I might have been deterred from it; but having made an incision of three or more inches, I did not reach the bottom of the abscess, and making another quite

as long with a like result, I at last had to make a third one. Scraped lint was then laid in the abscess; the two lips of the wound were united with adhesive strips; a plaster of simple cerate and a compress were put over it; some wine, warm rice water, a dose of laudanum, and friction with volatile liniment, were prescribed, to ease pain, and bring on reaction; for he had become faint, and was covered with a clammy sweat, although he had taken a dose of laudanum before the operation was begun. After he had recovered from the immediate effects of it, the general treatment was renewed. This consisted chiefly of a diet drink made of sarsaparilla, sassafras and meze-reon bark, and extract of liquorice macerated in water, and made into a decoction. But many other remedies were used, to counteract the untoward symptoms occurring from time to time—as fever, diarrhœa, swelling of the abdomen on the left side, and acute pain in different parts. Among these remedies were tartar emetic conjoined with the effervescing draught, acetate of ammonia, antimonial wine, tincture of opium, this in substance, the sulphate of morphia endermically applied after blistering, and by enemata. On the 1st of June, three days after the operation, the dressings were removed, the wound was cleansed of a large quantity of clotted blood, and the bottom exposed. It was smooth, glossy and formed by the gluteal muscles chiefly, but it extended in various directions under the integuments, and had several fistulous outlets, one of which was on the posterior upper part of the thigh. On the 4th, the dressings were again removed, and I found that the lint

had produced a healthy secretion of pus, and granulations were springing up on all sides; but on the 9th, so much irritation was caused by the former, that the wound became inflamed, fever occurred, his pulse rose to 120 in the minute, and so much pain was occasioned in the hip joint, that the lint was taken out, and a neutral mixture, made of sup.-carb. of soda and vinegar, mingled with fifty drops of laudanum, was administered. The adhesive strips were renewed, as required; the nitrate of silver was applied also, to heal the lips of the wound; and after the fever had entirely subsided, to remove debility, he took the sulphate of quinia and diet drink. June 16th, the parietes of the abdomen anterior to the iliacus internus muscle, became tumid, and sore to the touch; continued afterward to swell, and were poulticed. Suppuration occurred; and on the 27th of August, I made an incision into the swelling, and discharged a large amount of pus. Becoming more prostrated in the meantime, he was given an infusion of cinchona \mathfrak{z} ij., pulv. gentian \mathfrak{z} ss., pulv. zingiber \mathfrak{z} i., in lbs. ij. of boiling water. Lead water was used, to remove excoriation caused by the strips; a seton was kept in two of the fistulæ until their cavities were nearly closed; and by these means and similar ones, by the 12th of October, the wounds on the buttocks, as well as the fistulæ there, had perfectly healed, leaving a handsome cicatrix. Only one small fistula remained unhealed,—but a small quantity of pus issued from it; he had perfect use of the thigh; his general health had been restored, his strength, appetite and spirits had returned, and a speedy restoration to duty was anticipated.

This happy condition had been attained, although the ship had been cruising from one end of the Mediterranean to the other—had visited France and Greece,—spent the whole summer conveying vessels through the Archipelago from Smyrna, and was then on her voyage homeward. Most unluckily, however, on the 2d of November, two days after she ran out of the straits of Gibraltar, he was seized with a catarrhal fever, ascribed to damp air on the Atlantic, and impelled before a strong Levanter, or east wind, which had driven the vessel out of the Straits against the rapid current making into them. A misty state of the atmosphere prevailed in that part of the ocean, which is about midway between the Straits and Madeira, and its ill effect I had frequently observed. To relieve him, a half drachm of laudanum and the same quantity of antimonial wine were given immediately, and the next day he took the last named article with a half ounce of spiritus mindereri every two hours. The sulphate of quinine was then discontinued. The symptoms still became more unfavorable, the fever continued, the fistula remaining in the left groin increased to double its size, the skin extending from the former to the buttock became inflamed and erysipelatous, the cuticle peeled off, the buttock swelled, ulceration began in the cicatrices, after they had become livid and excoriated, and by the 11th, nearly all the newly formed parts had sloughed away, leaving a vast ulcer about three inches wide and twelve long, or the whole length of the great incision. In the meantime his fever continued, the pulse was small and frequent, and his mind flighty. Nevertheless we

did not despair, but continued the spiritus mindereri and antimonial wine; gave him hot marsh-mallow tea; bathed his feet in hot water; put a leech on each temple, and a lead water poultice to the inflamed parts. On the 7th, the fever having left him, the mixture was stopped, the poultice left off, an incision made into the upper part of the buttock, and a quantity of decomposed blood discharged. A plaster of mercurial ointment was then put on the buttock, the edges of the ulcer were brought together with adhesive plaster, and retained by a compress and belt. Delirium continuing, a sinapism was put to the nape of the neck, which relieved it; and to sustain strength, he was again given the diet drink and compound infusion of bark, with a fourth part of sherry wine in it. Great attention, as during the whole previous treatment, was paid to his regimen and general comfort. The mercurial ointment proving too stimulating, was diluted with three parts of simple cerate, and he soon began to recover. The sloughed parts healed rapidly; the fistula, by aid of frequent scarification and powdered cinchona, was filled up; and by continuing the above medicines as long as needed, and giving the sulphate of quinine, he still more improved. He also took a blue pill every other night, a dose of powdered rhubarb and calcined magnesia on the morning after for two days; and by the middle of the following January, the hip and buttocks were again perfectly healed.

Finally, by the 3d of February, notwithstanding the ship had been at sea nearly the whole time—had visited Mogadore, gone to Madeira and Teneriffe,

passed through the calm, hot latitudes between that island and Liberia, spent several days at Monrovia, thence crossed over to the West Indies, stopped a week at Martinique, and for a fortnight had been blown off the coast of the United States by a furious north-wester, which raised a tremendous sea, and greatly rocked her—all parts had entirely healed, he walked without help, and was then transferred to the naval hospital at Norfolk. From that he was soon discharged, well, applied some time afterwards, at the Philadelphia rendezvous, to re-ship, and being perfectly sound, was taken into service again, to make the air resound with his sledge hammer and anvil.

Another instance of abscess of the left buttock, had occurred in the same vessel, and in the person of the ship's cook, a slender, decrepid man of 45 years of age, who also had a cataract in the left eye and amaurosis of the right one; besides, was dyspeptic and diabetic. As in the preceding case, the disease was preceded by symptoms of sciatica, pain in the hip joint, and swelling over the left sacro-sciatic notch. He was taken under treatment, likewise, during the winter, was cupped, leeches several times, blistered, poulticed, took blue mass repeatedly, magnesia, &c. to work it off: had the blistered surface sprinkled nightly with the acetate of morphia, and was given, besides the tonics mentioned, an infusion of quassia. For the benefit of his eyes, a seton was introduced and worn for weeks in the nape of his neck. But five months after his admission on the list, and during the following May, the abscess had perfectly formed, and being about to ulcerate through the skin, was opened

by a valvular incision. About five ounces of flocculent, straw-colored pus, were let out. It continued to flow for more than three weeks; he became prostrated and hectic; and as the ship was bound on a long cruise into the Atlantic, he was transferred to the flag ship Brandywine. Of what became of him afterwards I have never heard, and cannot give the result of his complaint, but surmise it was a fatal one.

The following case of abscess of a different kind was sent to the John Adams from the Constellation frigate, to be carried home. The person was J. D., a young, handsome, delicate marine, who was said to have an affection of the urinary organs, ascribed to a fall down a ladder. He had undergone little treatment, and, according to his own account, taken only one dose of medicine, a large one of calomel. Being of scrofulous habit, this had salivated him, and caused soreness of the mouth, with ulceration of the gums. He was then weak and hectic; and, a day or two after he came on board the ship, was observed to have a small swelling on the left side of the nose, near its bridge. He stated, he had had the former broken when he was a boy, and the venereal disease eight years before. There was no other evidence of this having any thing to do with his ill health, and he was treated correspondingly, and for mercurialism.

An incision was made into the swelling—a half ounce of pus was discharged; and the cavity being probed, the left nasal bone was found rough and carious. He was put on a plain, nutritious diet; took magnesia, to correct acidity of the stomach; had the lunar caustic applied to the fungus, which sprung out

of the wound made on the nose, and took the sulphate of quinine and two diet drinks, of which the following was the principal. It consisted of sarsaparilla ʒviij. , lignum guaiaci ʒij. , sassafras ʒiv. , mezereon ʒij. , honey ʒviij. , and water two gallons, which was boiled down after maceration to one gallon. This decoction was cooled, strained, and taken as required. In the second case, the guaiacum and mezereon, which were too acrid and stimulating, were left out, and senna leaves added. After this decoction had been boiled down as the other, it was sweetened with loaf sugar, and used in like manner to the above. Three weeks after he was taken on board, the alveolar processes of the upper jaw were found carious, and the nasal process of the superior maxillary bone eventually became affected. In the meanwhile the ship had got to Liberia, he had been more prostrated by the heat of the climate, and was prescribed bathing in cold sea water. By this treatment, he recruited, reached the United States safely, and some time subsequently recovered his health, with the loss of the bridge of his nose. This case is, I consider, a very striking one of the positively poisonous effects of mercury, and it proves the great impropriety of giving it without regard to the constitution of patients. It moreover appears, that it is given wrongfully in other than syphilitic cases, and that its use should be avoided when other medicines can be as well employed without such consequences.

To show how usefully the preparations of mercury may be employed, and yet prove injurious, I will give the account of another case, that of S. Mahoney,

a young sailor of 22 years, tall, slender, and disposed to disease of the lungs. He had been treated 18 months previously for pleuro-pneumonia, and cured by means of V. S., nitrous powders of the common kind, containing calomel, thirty-six leeches to the chest, the spiritus mindereri, and tart. emet., blisters, the sulphate of morphia, and demulcent drinks. He was re-admitted for a tumor on the posterior face of the right olecranon process, as large as a hen's egg, and resembling a wen. He stated, that three months before he had fallen on the elbow, and the tumor had formed since then. As it was increasing rapidly, it was cut off by an elliptical incision, and was discovered to have been formed of a thick sac, containing a half ounce of yellowish serum, and a fibrous mass adhering to the internal surface by tendinous bands. The base of the tumor adhered so closely to the bone that it could not be perfectly detached. After the incision, the edges of the wound were brought together with adhesive strips, a compress of lint was applied over them, a pasteboard splint was put in front of the joint, and a roller passed around the forearm and it, to prevent flexion and the protrusion of the naked olecranon through the wound. These things done, he took a dose of Epsom salts and magnesia; and these medicines having worked too actively, and with the bleeding caused too much debility, he was given a dose of laudanum and tinc. of lavender. The dressing remained undisturbed for several days, and was then removed. Every attention was paid him; he was kept on low diet, and at rest, and yet the wound became unhealthy. Granulations sprung up,

and filled it; became fungous, and projected a half inch above the lips; a number of large pustules formed on the adjacent skin; a solution of sugar of lead was used as a wash for these, and the lunar caustic applied to the fungus time after time, and as often as the dressing was removed. Notwithstanding, the fungus continued to grow, and I determined to try constitutional with local treatment. After the operation had been done for more than a month, I prescribed blue mass, five grains every other night, and powdered rhubarb ʒj. with magnesia ʒi., the next morning, and the caustic was applied occasionally. This treatment had a most happy effect. The fungus quickly sank down, the edges of the wound approximated, and by the 10th of January, three weeks before the ship arrived at home, a perfect cicatrix had formed, and the elbow was well. This cure strongly illustrated the utility of mercury; but to show what injury it at the same time did, I will state that, on the 17th of the previous month, without any reason to suspect venereal taint, the right inguinal glands began to swell; a bubo formed and suppurated; twenty days afterwards a second one formed in the same part; and five days subsequently a third one appeared in the left groin, between the scrotum and thigh. The latter bubo was indolent; the two first, on being poulticed, formed a single large abscess, and the last of the two discharged its contents through the incision of the first one. All of them were obstinate, and resisted local and general remedies. The nitrate of silver, Turner's cerate, cathartics, blue mass, and Lisbon diet drinks were of little service, and in February he was sent to the

naval hospital of Norfolk, the buboes having been still unhealed, although his elbow remained sound. Hence, I was well pleased with the action of the blue mass in this respect, but was displeased at the palpable effect it had in developing a scrofulous diathesis. Had the patient have had chancres, or been known to have been exposed to syphilis, the buboes might have been attributed to it; but neither was the fact; and his confinement to the ship or her boats for at least a year, rendered it impossible for him to have been infected within that period, as women were excluded from her.

A case of not less importance, if not of more, was that of a seamen transferred to the John Adams, at Athens, in Sept. 1833, from the flag-ship United States, which the year before had arrived in the Mediterranean. This case was also attended with enlargement of the inguinal glands, but he had in addition an induration of some of the lymphatic ones of the neck; one of the parotids was swelled, and there was an extensive ulceration of the fauces, which had destroyed the right tonsil, and was attended with inflammation and tumefaction. He had been affected for about seven weeks, and nearly all his teeth were decayed. The molars had suffered most, pus filled the hollows, the gums were black, and a fistulous ulcer had penetrated the right side of the velum pendulum palati. His voice was hoarse and guttural, and deglutition difficult; the edges of the ulcers were thickened and inflamed; and, as he had had no venereal affection, was thin, pale, and had stronger marks of a scrofulous diathesis, his affection was considered

to be of that nature ; though, so far as I could learn, he had been treated only for an ordinary ulcerated throat, and had been using a number of gargles ; among which there were two of the sulphate of copper and nitrate of silver.

Agreeably to my opinion of the scrofulous nature of his disease, an ointment of iodine \mathfrak{zj} ., basilicon \mathfrak{zj} ., was spread on a rag, and directed to be applied over the right parotid gland twice a day. He was also given a solution of iodine and hydriodide of potash, in distilled water, and in the dose of twenty drops, four times a day. The dose was gradually increased to forty drops, and a strong solution of the nitrate of silver was applied twice a day to the ulcers by means of a mop.

In spite of this treatment the ulceration continued, penetrated the velum in another place and then severed it, so that it fell to the left side and rested on the tongue. A sulcus was formed in the roof of the mouth, and the palatine bones seemed to have been destroyed by caries. In the course of two weeks, however, the parts had improved, and the ulcer on the right side of the fauces had healed, though the velum on that side was nearly obliterated, and the uvula was considerably inclined to the other. The disease, however, continued in other parts ; the fistula was detected in the right anterior half arch five weeks after he came under my care, and the solution of the nitrate of silver was re-applied by means of a hair-brush. This fistula remaining stationary, was then laid open with a scalpel, and bleeding very profusely, a solution of alum in the

tinct. of kino was successfully applied as a styptic. A diet drink of a similar kind to those mentioned was also given. He took blue mass grs. x. every other night, the caustic was re-applied as required, the ulcers were scarified with a lancet repeatedly, and yet a month later the fauces were more inflamed, and so continued until, in using the wash, the half of what appeared to be the body of a dead bread worm was extracted from the ulcer in the velum. In a short time subsequently the throat became much less inflamed, the internal remedies were continued, and a gargle of sulph. of zinc and sage tea used until it lost its good effect, and was then left off for the caustic in solution and substance. To remove costiveness several doses of cream tartar and sulphur in molasses were given. Under this treatment, varied as required by the condition of the patient, his health was restored, the perforations in the palate closed, and the other ulcerated parts nearly healed by the time of his arrival in the United States. His transfer to the hospital prevented me from effecting a perfect cure, and this was the greater subject of regret, as he had been under my care almost five months.

CHAPTER V.

Abscess of the Parotid Gland and of the Hip-joint. Various Ulcers and method of Treatment. That for Venereal Ulcers, Syphilis and Gonorrhœa.

A very rare case of abscess in the left parotid gland occurred on board the Delaware in her voyage to Brazil. The patient was a seaman of 33 years, who, without any known cause, was seized with swelling and acute pain in the part, without any constitutional symptoms for four days after his admission on the sick list. Fever then ensued, and was followed by a great increase of pain and swelling. This soon extended itself to the whole side of the face, and the lids of both eyes became tumefied so much as to intercept vision. Linseed poultices were at first applied, and upon the extension of inflammation into the surrounding parts, were mingled with a solution of superacetate of lead. Purgative pills were taken, the parts were scarified, and suppuration having occurred on the sixth day, an incision was made into the abscess with a lancet and a large quantity of foetid pus let out, which continued to flow for many days. In the meantime the poultices were continued, and opium rubbed up with vinegar was given to relieve pain. Fever was subdued with the spiritus mindereri and tartar emetic, the blue pill was taken at night and worked off with epsom salts or magnesia and rhubarb. The abscess, however, refused to close ; the neck and left angle of the lower jaw became indurated and

swelled, and his constitution depraved. A bitter infusion and syrup of sarsaparilla were prescribed as needed; lead water was injected into the cavity formed beneath the ear, a lotion of sulphate of zinc was used, the black wash was also injected and a seton passed through the abscess from above downwards. An incision was likewise made beneath the left eye to let out a collection of pus formed there. He was put on a diet adapted to his condition, and at first low, then nutritious. The bowels were kept open by the purgatives mentioned, cream of tartar water, and castor oil; and tone was given to his system by the sulphate of quinine dissolved in elixir of vitriol and water, and properly sweetened. Under this treatment he was restored to health two months after his admission.

An abscess of a still more obstinate kind, bearing a strong resemblance to that of the armorer, occurred in the above ship, and was treated at the same time with the abscess just described. But the duration of the former one was much longer, that being continued a period of six months, and it was the result of a scrofulous inflammation of the left hip joint, or morbus coxarius. The subject of the affection was a sailor of small size, aged 22 years, who stated that he had fallen on the left hip six years previously, and had hurt it so much as to have been lamed for a week, but that afterwards he suffered no inconvenience until just before he was taken under treatment. Pain then came on in the left groin and its glands began to swell. Two days subsequently he had cough, general pains, and other signs of having caught cold.

The ship at this time was lying in Hampton Roads ready to sail, and only awaiting orders, and a number of her crew were affected with catarrh. As the patient seemed only effected with this, and had said nothing of his having once injured his hip joint by a fall, he was given at first only a pectoral and a dose of epsom salts and tartar emetic, and directed to use frictions to the seat of pain with vol. liniment. A soap plaster was next applied to the glands, which reduced their size, but the pain continuing, the parts beneath becoming tumid and indurated, two blisters were put on in succession. The swelling still increasing, poultices were substituted, and excited supuration three weeks after his admission. By this time the swelling extended throughout the groin and occupied the parts above and below Poupart's ligament. An incision was made into the swelling of the groin, a profuse discharge of bloody pus took place, and in a few days assumed a greyish hue. The nature of the disease having been previously developed satisfactorily, the patient had been prescribed the syrup of sarsaparilla twice a day in the dose of three ounces. A month afterwards another incision had to be made on the inside of the thigh, next the scrotum, to let out pus. The blue pill was given, the syrup continued, and frictions were used to relieve pain and stiffness of the thigh. He also took opiates as required, and an infusion of cinchona and gentian, after having used the syrup for more than a month. His bowels were kept open by pills and castor oil; black wash was applied to the abscess as a lotion, and when the former had closed, an issue was made over the

joint with caustic potash, and beans were put into the issue formed to keep it running. Under this treatment the affected parts healed kindly though slowly; but by the twelfth of December, at the time the ship had crossed the tropics and got on the coast of Brazil, he had become pallid, emaciated and debilitated; and besides had had an ulcer formed on the sacrum from his having been bedridden two months. The left lower extremity was also soft, œdematous and swelled, the leg was flexed on the thigh, and this on the pelvis, and Amesbury's splint was applied to keep them extended, and prevent permanent flexure and shortening of the limb. To remove swelling a bandage was first applied around it from the foot upwards.

Notwithstanding all that was done for him and his previous improvement, he became still worse on our arrival at Rio, and was seized with fever. The parts again swelled, suppuration returned upon the re-application of a poultice to the groin, and a discharge of pus occurred through a fistulous opening in the place of the first incision. The fever was relieved after this, and the administration of repeated doses of tartar emetic, each consisting of the one-eighth of a grain in solution. Afterwards he took the quinine mixture three times a day, and kept on the poultices as long as necessary. On introducing a probe, the abscess was found to reach several inches towards the anterior superior spinous process of the ilium. But by a continuance of the treatment adopted the patient again improved; the groin healed, and he gradually recovered the use of the limb so far as to be able to

walk about the ship with a crutch. Perfect use of it was impossible, for so far as could be ascertained, the head of the femur had been entirely removed by caries, spontaneous dislocation had happened, and a false joint had been formed on the dorsum of the ilium. The knee and foot were turned inwards as in accidental luxation, the limb was shortened about three inches, and the patient was barely able to touch the decks with the toes of the left foot. He was, moreover, so unlucky as to again take cold on our arrival at Montevideo, and to have the affected joint injured by concussion with a shipmate. By these mishaps his recovery was retarded, but in April he was discharged to do duty, and being lame was sent home during the following summer.

Of all the varieties of external or tegumentary ulcers I have met with at sea, the most numerous and difficult of cure were the varicose, indolent and venereal. The first kind were uniformly seated on one or both legs and near the enlarged veins, and the second kind were generally on the same parts, and sometimes of a scorbutic character, having been attended with puffiness and lividness of the limbs, the formation of fungus and a strong disposition to slough, which displayed itself particularly in the *La Plata*. The cause of this was thought to be as much owing to improper aliment as the coolness and dampness of the climate, rendered more injurious by the strong winds continually blowing up the river from the southern Atlantic; for the ship's crew were supplied abundantly with fresh provisions several times a week. In the treatment of the varicose ulcers, uniform pres-

sure was made upon the limb with a spiral bandage and adhesive strips, numerous metallic lotions and some ointments were applied, the patient was kept at rest, the limb was elevated, and the constitution kept in or restored to a sound condition. The same rules were observed in treating indolent ulcers; the edges were kept down by lunar caustic, pressure and scarification, and they were washed generally with a solution of the sulph. of zinc, sulph. of copper or nitric acid several times a day, or sprinkled with powdered cinchona, which was very efficient. On the coast of Brazil this was most practised, from the general indolence there of all kinds of ulcers. Hence the cases there were also treated by the free use of internal tonics, among which the preparations of quinine were commonly preferred. Of the ointments, the citrine, red precipitate and Turner's cerate were most efficacious. As in the treatment of abscesses, the blue pill was employed, laxatives were given afterwards, and the patients dieted according to their condition. When they manifested scorbutic marks, lemonade was freely drank, and some of the bitters or tonics were administered.

In the treatment of venereal ulcers, my uniform practice was to apply the lunar caustic once or more, then to heal them up with the black wash, or a solution of sulphate of copper or zinc, and if this failed or was not effectual enough, a little mercurial ointment was rubbed near the ulcers. Sometimes the blue pill was taken; in a few cases, when the ulcers sloughed, a solution of Zi. or Zii. of nitric acid in Zviii. of water was applied with certain success.

In phagedenic cases, this acid was occasionally used in its pure state, but as it is very severe undiluted, it should never be used if avoidable. The solution is preferable generally, and recently I have employed it oftener than the lunar caustic, as it does not stain the clothes or dressing, is milder, more conveniently used, and equal if not superior in healing power. After putting this solution over the chancre it is brushed over with collodion, which soon dries and proves a very fine dressing, but as it is apt to fall off from any accumulation of pus beneath, a dressing of oiled tissue-paper or adhesive plaster is then substituted.

If buboes followed the ulcers, they were if possible driven back by leeches or blisters, but these frequently failed, and the latter were objectionable from their inducing permanent induration of the skin as well as thickening of it. My practice, therefore, was generally to cause suppuration by applying linseed poultices. But at Naples the virus of syphilis was so active and violent, that it quickly impregnated the system, acted like the poison of a viper on the parts, producing chancres and buboes in rapid succession, and I found that the best practice was to induce their absorption or suppuration by frictions with mercurial ointment in the course of the absorbents leading towards them. When constitutional symptoms followed they were combated with the syrup and decoction of sarsaparilla, and sometimes with blue mass in alterative doses. Other mercurial preparations were not employed at all, and salivation was never induced, yet very few instances of secondary syphilis happened, and no case was

uncured, nor were any bones made carious, as under the old mercurial mode of treating syphilitic diseases, when patients were made to spit by the quart, according to John Hunter's practice. One of the most remarkable cases of secondary syphilis was that of an officer who contracted two chancres at Malta. They were healed with the nitrate of silver, black wash and lead water, without any apparent constitutional taint; no buboes formed, and yet six weeks after he was first treated for chancres, and some days after he had returned to duty, a venereal ulcer formed in both tonsils. His diathesis was highly nervous and sanguine, the ulcers were irritable and inflamed, spread extensively, were very hard to cure, and resisted the healing virtues of several gargles, as of borax, sage tea and honey, alone, or united with tincture of myrrh. When these gargles had failed, a solution of five grains of the nitrate of silver to an ounce of water was substituted, and applied once or oftener every day with a mop. This medicine had the desired effect, and was gradually increased to ten grains, the patient was put on low diet, took five grains of blue mass every night, and a decoction of radix sarsaparillæ $\mathfrak{z}\text{iv.}$, senna $\mathfrak{z}\text{i.}$, extract of liquorice the same, extract of sarsaparilla $\mathfrak{z}\text{i.}$, loaf sugar $\mathfrak{z}\text{viii.}$, in a gallon and a half of water, which was boiled down a third. The next day after taking the blue pill he took a dose of powdered rhubarb. Afterwards some sassafras and mezereon were added to the decoction, but proved irritating to the throat and were omitted. By the above treatment the ulcers were healed in about a month, but the fauces continued inflamed,

and a scaly eruption [appeared on the scalp, spread downwards over the back, and formed copper colored blotches over all the body and limbs. Not even the penis was exempted, and it became covered at the lower part with continuous scabs. This eruption was as obstinate as the ulcers in the throat, which re-appeared in a short time, again healed up, and broke out again four months after they first appeared. The solution of nitrate of silver was perseveringly applied to them, and at last effected a cure with the help of constitutional remedies. In addition to those named, hot bathing in fresh and sea water was used every day, seidlitz powders were substituted for rhubarb after the blue pill, and the skin kept perspirable by dissolving four grains of tartar emetic in a gallon of the diet drink. His condition was soon improved by this change of treatment, his throat and skin assumed their natural state, and he was restored permanently to duty early in August. His recovery was a subject of joy to himself, medical attendants and colleagues, who had been performing his duties so long, and would have probably been obliged to do so indefinitely, had he been treated according to the old routine and thoroughly mercurialized. For his irritable, sanguine temperament and partly scrofulous habit, would certainly have been aggravated by such practice, and incurable ulcerations and caries been the probable consequences. His case illustrates, too, the very great importance of healing chancres immediately. His were not healed, I understand, from his living on shore when they broke out, and their

having been allowed to attain a large size before the medicines mentioned were applied.

Of primary syphilis many cases were treated, and most of them occurred in the Mediterranean, whose chief ports abound with every form of venereal diseases. Hence the crews of vessels allowed to go frequently on shore at them, invariably suffered much from them. That of the United States, consisting of 480 men, proved that fact, for about a fifth were infected during her cruise ending in the fall of 1838. Of these, a fourth had primary and secondary syphilis, and sixty gonorrhœa. In the case of the latter disorder, both on board her and other vessels, as well as on land, I have found that the safest and surest plan of treatment was to combine local with constitutional treatment. This was ascertained by using each method separately on distinct classes of the patients, learning the average time it took to cure each class, and then doing the same with regard to a third class, treated after the joint method. The average number of days for the last class was fourteen; that of the others much more. Hence the general method of treatment adopted afterwards was to confine the patients to their hammocks, open their bowels with castor oil in preference to any saline purgatives which might render the urine more irritating; and to give gum water or flax-seed tea, sometimes with a grain or two of tartar emetic to a quart, chiefly to create slight qualmishness and prevent indulgence in food. This was strictly farinaceous, and commonly fluid. Leeches were applied under the urethra, or poultices to the whole part, warm bathing was used, and injections of

the superacetate of lead, from three to five grains, prescribed. This was gradually increased, now and then joined with the sulphate of zinc, or substituted by the nitrate of silver much diluted. This latter I have employed first, but have seen it produce such violent effects, as not to be able to recommend it at an early stage and in a large quantity. To relieve chordee, camphor in pills of five grs., and frictions under the urethra with mercurial ointment were frequently employed, the first article acting as an anodyne and sedative, the latter producing absorption of the coagulable lymph, preventing the expansion of the urethra from corresponding with that of other parts. Internally, we likewise gave powdered cubebs, in the dose of $\mathfrak{z}\text{i}$. two or three times a day, the oil of the same article, and balsam of copaiva in its pure state, mixed with sugar, gum arabic and water, or made into pills with calcined magnesia, which is a very excellent method of using the copaiva, as it prevents nausea, corrects acidity, and enables the stomach to retain a much larger quantity. Hence, my patients preferred the pills to any of the balsam mixtures. It mattered not whether they were combined or not with laudanum, tr. of lavender, or sweet spirits of nitre, and especially with the last, which is so ethereal as to be intolerable to some persons. By the above treatment they were cured, pleasantly, and without stricture, but the former was varied when required, and if orchitis supervened, the affected part was leeches, poulticed, washed with cool astringent lotions until restored to its pristine dimensions, and when these remedies failed, the iodine ointment was

successfully applied ; but it occasioned such excessive pain after the cuticle was stripped off by it, that few patients would submit to its reapplication.

But our seamen, although subject so much to venereal diseases, are perhaps as continent altogether as any like number of landmen. This is caused both by inability to obtain access to females, who are rarely employed in any capacity in our ships, and by the long separation which occurs between the sexes, suppressing in the male the common inclination towards the female. Protracted absence from the latter causes the former to think little or not at all of them ; libidinous thoughts thereby are unexcited or rendered faint ; the generative organs are equally unexcited in consequence, fall into a state of collapse and torpor, semen is secreted in small quantities, if not entirely suppressed, and the effects of its accumulation in the vesiculæ seminales are not suffered. But in persons of warm temperaments, free drinkers of wine and grog, the reverse happens ; the semen collects in large quantities, creates constant pruritus about the anus, a hæmorrhoidal tendency, sense of heat about the neck of the bladder, painful nocturnal emissions, and violent spasm, with acute intolerable pain in the muscles of the above and adjacent parts. Severe protracted priapism attends the pain and spasm, and these occur together or separately. As a consequence of such sufferings, or mere venereal desires excited by long abstinence from females, some seamen become impatient of confinement on board, are anxious to break it, and if it cannot be done lawfully or unlawfully, are apt to resort

to unnatural means to relieve their desires. This has undoubtedly become more so since women have been forbidden access to men of war. It hence follows that sailors have the alternative of suffering from too much continence or the diseases incidental to incontinence. But which alternative to choose is not usually left to themselves; their commanders commonly decide which shall be taken; and as morality now prevails, they generally, if not altogether, forbid the admission of lewd women into their vessels. Of late years few exceptions to this have come to my knowledge, and they were in cases mostly of women allowed to visit the ships, either for the gratification of curiosity or business. But just before my first cruise to the Mediterranean, Commodore Biddle, the commander of the squadron, was reported for allowing such women to visit it. He denied the charge, but at the same time stated to the Secretary of the Navy, the Hon. John Branch, that if women were excluded from the ships, their crews would indulge themselves in a more unnatural manner. Some years previously to that time, it was a common practice in the squadron to permit lewd women to visit in large numbers, but to prevent the infection of the men with venereal diseases, the former were not permitted to go below deck before they had been inspected by the assistant surgeons in the gang-ways, a vile degrading duty, which exposed them as well as the women to the ridicule of the spectators. Years after the practice was abandoned I heard an officer laugh heartily at the burlesque aspect presented by a very near-sighted assistant, while he was making the in-

spection. Morality, however, at last prevails, and it is found best to exclude such females from ships, to let their crews suffer rather from continence than the evils of incontinence, and even to prevent thereby the enlistment of men who cannot restrain themselves, or to let them desert, when the opportunity offers, to indulge themselves, which cannot often happen in a well guarded or disciplined ship, although it may in a camp, as in that of General Rosas, near Buenos Ayres. To such an extent did desertion occur from it, that it is said he had finally to allow the admission of women into camp, and by that means only succeeded in stopping desertion.

For the cure of the affections above named, the best remedial means are to avoid all stimulating drinks, high seasoned food, the reading of books and listening to songs or conversation calculated to excite lewd thoughts, to evacuate the bowels well, and use hip baths of cold water, or warm, when any inflammation exists in the affected parts. The patients, moreover, should be careful to evacuate their bladders just before retiring to sleep, not to drink so freely of any liquid as to cause a huge accumulation of urine in them while in bed, not to use very warm coverings, and when the priapisms are very intense, to take ten or fifteen grs. of camphor in pills or powders during the evening. In fine, every thing ought to be avoided which may induce or increase irritation, directly or indirectly, in the generative organs.

CHAPTER VI.

Cutaneous Diseases. Scabies; Herpes; Impetigo; Acne; Urticaria; Frequency of latter between the Tropics. Scarlatina and Variola. Frequent occurrence of this on board ship in all Climates. Sanitary measures taken and Treatment found best.

Besides the diseases mentioned, some of the most common met with were scabies, herpes, impetigo, acne, and urticaria. Between the tropics the miliaria occurred frequently, scarlatina north of them, and variola in every climate. Pemphigus was of rare occurrence every where; cases of measles were seen only on board of one ship. Erysipelas was very rare, and the same may be stated respecting other cutaneous affections not noticed. Of scabies every grade was met with, those only affecting the fingers and arms, as well as those spreading over all parts of the body, and simulating diseases of a different kind. This was properly ascribed to neglect, want of cleanliness, and allowing patients to remain affected with itch without being reported, or from their keeping aloof from medical advice and using no remedial agents, until the skin had become thoroughly irritated by the animalculæ, and was covered with scabs. From this circumstance they were attributed to some other cause, and were thought owing to some of the eruptive disorders. In warm climates from constant excitement kept up in the skin, this blunder was most apt to be made, particularly when the patients kept aloof and applied for no relief until forced by excessive

itching. But by careful examination of the hands for the detection of the small vesicular pimples commonly found in itch between the fingers; by the fact of others having the complaint on board, and the absence of constitutional symptoms, we satisfied ourselves of its existence in the persons being examined. In the treatment of those affected, a speedy cure was uniformly obtained by me from the use of sulphur ointment rubbed on all parts affected twice or three times a day, and the cure of some cases was hastened by giving as often from $\mathfrak{z}\text{i}$ to $\mathfrak{z}\text{ii}$ of the flowers or lac sulphuris in molasses. A solution of the iodide of potash as a lotion was also efficacious, and preferred by some from its not tainting the air, but I decidedly preferred the sulphur. For the hands, the most cleanly mode of applying it was to work up the flowers with soap, and to use it as the ordinary. To the body the ointment was applied twice or three times a day, and in some cases when the whole skin was infected, I generally gave the flowers in the dose of $\mathfrak{z}\text{i}$ in molasses, as often. To relieve the itching immediately, and the inflammation occurring in bad cases, a solution of the super-acetate of lead was used as a lotion. Change of clothes, as much cleanliness as could be observed while using the ointment, and separation from the uninfected, were likewise enjoined. By strict observance of this treatment the disease was uniformly soon cured and stopped from diffusion.

I have frequently known seamen also to be greatly annoyed by vermin of two kinds, the common louse and crab. For the cure of the complaint caused by the first, the razor, and a thorough washing with soap and water,

prescribed by the officers of the line, were usually employed, though as much for disgrace as a remedy. But for that complaint as well as for the one occasioned by the other vermin, none can be used with greater certainty than mercurial ointment. By rubbing it in the hair, or on the parts affected, a few times, it will always act as a deadly poison to the vermin, at once kill them and remove the itching.

Herpetic eruptions were met with at long intervals, and were mostly of a mild kind, which soon healed by application of the lunar caustic or citrine ointment; but some cases were not cured until treated constitutionally. The severest case I ever saw was that of a young muscular, plethoric seaman in the Mediterranean, who had had an attack four years before. His whole body was covered with the eruption, in widely spread or circumscribed patches, of a bright red hue, and throwing off thin scales. His scalp was affected also, and the eruption on it became pustular. He was twice on the sick list, the first time for three months, the second for four, and was each time cured with great difficulty. The remedies employed for the purpose were *ol. ricini*, epsom salts, sulphur and cream of tartar, to relieve the costiveness preceding the disease; and afterwards the compound decoction of sarsaparilla, blue mass, minute doses of corros. sublimate in the former, the warm bath, and various lotions and ointments. Of the last named, the red precipitate and citrine were the most useful. Of the lotions, one made of corrosive sublimate, from one to two grains in an ounce of water, was by far the best,

and during the several terms of treatment the cure was not effected until it had been applied. The eruption then soon began to wither; and when cured, no other relapse occurred to my knowledge. Like treatment locally was best for the ordinary ring-worm, herpes zoster or shingles, acne and impetigo. For urticaria, if induced by improper drinks or diet, as fish, sour fruits, and red wine of Minorca, emetics and cathartics were prescribed, of which epsom salts and tartar emetic to produce a double effect of purging and vomiting, or magnesia to act as an antacid and purgative, were preferred. For urticaria induced by heat of weather, or by excessive exercise, no application was comparable to aqua ammoniæ applied with a sponge to the affected parts. Though stimulating and pungent, it gives instantaneous relief, and hardly needs reapplication. It produces a like effect in other eruptions and external inflammations—erythematous, erysipelatous and miliary; and even in gouty inflammation of the feet, I have used it with great success. At the same time that it removed this it kept up such excitement of the parts as to prevent it from becoming retrocedent. The action of ammonia is certainly very peculiar; though it stimulates, it also seems to have the power of causing a disgorgement of the capillary vessels by inducing their contraction, and of producing a sedative action in them, and thus to relieve inflammation. Ammonia, moreover, by its rapid evaporation, carries off a great deal of caloric from the parts whereon it is applied, and by that means, too, acts remedially. But care must be taken that it be not of full strength, and is diluted with

water appropriately to the case under treatment. Otherwise excoriation and unnecessary pain may be caused. When this is intense, some spirits of wine, brandy or whiskey added to the ammonia increases its efficacy.

Scarlatina was seldom encountered, and it always happened, in the United States, during the winter, and on the eve of our departure. There was no reason to believe it originated on board ship, but that it was brought from shore. In its nature it differed as it does on land. Some cases were mild, attended with slight fever and eruption; others were accompanied with high excitement at first, then by great prostration. Such was the fact with the seaman of the Brandywine, who died at New York of scarlatina. In him it was of the most inflammatory kind, in the commencement. His pulse was very full, strong and rapid; v. s. was demanded, but soon after it his system sank, delirium came on, putrid ulceration of the throat occurred, sordes collected on the teeth, and he died on the fifth or sixth day after he was taken sick. His death, however, may be in part ascribed to his having been kept in an obscure place, not applying for further attention, and to the very great number of other patients to be prescribed for during the intensely cold weather we were then suffering. Most of the other cases which occurred were mild, attended with little or no fever, with a white furred tongue, having red papillæ projecting through the fur, and slight inflammation of the skin and throat. These cases required only laxatives, mild diaphoretics and astringent gargles, as of alum, borax, sage tea, and tincture of

myrrh, to be cured. But after the ship got to sea, another man, who had his throat very much inflamed and swelled, suddenly sank into a typhoid state and died. He had been unwell a month, was convalescing it appeared, but being confined on the berth deck with a number of persons ill of typhus fever, he evidently was infected with it, had symptoms of pneumonia, and was so much surprised when he heard that the captain's cook, in a cot near his, had just died of the former disease, that he lost all hope, repeated what he heard, "the French cook is dead," sank upon his pillow and died within an hour. He was a novice at sea, and not possessed of the fortitude and peculiar buoyancy of spirit belonging to sailors.

But of all eruptive disorders, the most common, the most afflicting among them, is small pox. In all places, in all climes, they suffer from it, and of six ships of war in which I have cruised, it infected the crews of three. Three of them escaped by good luck, if not by precautionary means, but one, the United States, got it on board three times, once before she left New York in 1836, and twice during her cruise in the Mediterranean during that and the following year. The first time, only one case happened, from its being sent to the naval hospital as soon as detected. By the same precaution the Brandywine had previously got rid of the disease, at the same place, and the Delaware was equally fortunate in doing so, at Rio de Janiero. In the last instance, for want of a better place, the patient was put beneath a tarpaulin tent pitched for him on a large rock, called Rat Island, opposite the city, and there treated until

well. A man who had had small pox attended him, no one else than he and myself were allowed to go on the rock, and though the patient had had the primary fever and staid in the ship four days afterwards, no other person got the disease. This may be attributed to its having been modified by vaccination, of which he had a good mark on his left arm, or to the persons who were near him having been protected, or being insusceptible otherwise. He himself caught the disease merely from being on some barrels with a negro man whom he found on the island of Enxados, and conversed with for some time. The negro was convalescing, and had so little the appearance of having had small pox, that my patient did not think of danger, and allowed him to sit only a foot or two from him. Nor did the latter make known these facts until two days had elapsed after he was seized with the primary symptoms, the pustules had been developed and strict inquiry was made of him regarding exposure to the complaint. Hence the cause of his not having been sooner sent out of the vessel and quarantined.

She also had a like lucky escape from contagion after her arrival in the Mediterranean. A store-ship brought a case of small pox into the harbor of Mahon, anchored near her and held communication. The case was reported to Commodore Morris, as one of a doubtful character. I was sent to see it and found the patient as scabby as Lazarus, and could not refrain from expressing my astonishment that there should be any doubt of the nature of the case. It was reported to the Commodore, intercourse was prohibited with the store-ship, and although it was

denied that the man had small pox, at my recommendation, he was sent to the Lazaretto, in charge of a man protected by vaccination, but who being not entirely so, became infected with varioloid, and had a moderate attack. This proved positively the character of the complaint, and it was further proved by inquiry, and ascertaining that a case of varioloid had occurred in the above ship, a few days after she left home. In what manner she obtained pratique at Gibraltar, and again at Port Mahon is still a mystery, and it is uncertain whether it was owing to connivance on the part of the quarantine officers, their being uninformed of the cases which had occurred, or to the nature of the disease not being understood by the medical officer and others of the vessel infected. By keeping the patients in the Lazaretto until well, and then, according to my custom, by burning all things belonging to them, the squadron escaped greater contamination. Of the good effects of separating the sick from the well, and of the contrary from not doing it, proof was afforded on board the United States. While lying in the port of Alexandria a marine on guard at the starboard gangway saw a shore boat approaching with several Egyptians in it. One had marks on his face of recent small pox, the boat was hailed and ordered to keep off, but she got to the foot of the ladder before she did so, and within fifteen or more feet of the sentinel. A week after, the squadron left port he was taken sick of varioloid, got well in a few days, but infected a seaman with a genuine small pox. Fortunately the ship arrived at Mahon before it attacked him, he was sent to the Lazaretto, where

he staid three weeks, and had the disease in the confluent form. Yet by observing the precautions mentioned no one got the disease from him.

Of the bad effects of not excluding patients ill of it from the sound, an instance happened during the subsequent winter at Smyrna. A mulatto seaman in watering the frigate there, got small pox from some of the natives at the fountain. At the same time he was seized with a violent catarrh, or influenza, then universal in the crew, and had the other complaint so masked that he was treated for the latter several days, and until by the approach of a lamp, near his face, the eruption was discovered by me on his forehead. As soon as this occurred, he was put out of the sick bay, which was in the bow of the vessel, and hung in his cot on the outside. From there he was soon transferred after some difficulty in getting permission, to the gun deck, and near the fore hatch. Deeming that an improper place for him to remain in, as many men hung their hammocks near him, and having in vain recommended his being sent on shore, I applied for the poop cabin which was vacant, to accommodate him, and at last obtaining it, put him there; but it was too late, he died in a day or two, and was thrown through a port hole into the Egean sea. A sailor, too, who had slept next to him on the gun deck, got the natural small pox from him, before or after the ship reached Mahon, and we were able to separate him from the crew, and send him to the Lazaretto, ten others, eight men and two officers, were infected. From a precisely similar circumstance, the small pox got on board the Mace-

donian on the eve of her departure from Brazil, in September, 1828. Two merchant seamen, at Rio, came to her for passage home. One was Freeman, a mulatto, and in two or three days afterwards, on his presentation at the table of Surgeon Ticknor, who was prescribing for the sick on the gun deck, he was found to be feverish, to have his forehead swollen and covered with variolous pimples. The surgeon forthwith got up, and reported the case to Commodore Biddle, who sent the patient without delay to the city hospital. The frigate left port, the south east trade wind soon arose, swelled her sails, and wafted her homeward; she bounded over the waves, dashing the snow white foam far from her sides. All hearts were glad, the merry sailors in the evening collected on the forecastle, and danced to the inimitable music of Miller, the sailor fiddler, and Jack Williams, a lively young negro, capered a jig to the admiration of every bystander. The next evening the same merriment was repeated, but the day after, an invalid, James Grant, who was consumptive, and had been sent from the corvette Boston to go home in the frigate, was seized with small pox. He was in no manner protected. He had neither been inoculated nor vaccinated, and most unluckily had had his cot hung in the sick bay next to the hammock of the infected mulatto. This apparently trifling incident proved a most disastrous one. Grant had the disease in the most terrible manner, the pocks on his face perfectly coalesced, became almost black, and his whole body seemed to have become decomposed, such was its feter. It was in vain that he was put behind

a screen, abaft on the starboard side of the gun deck, and there only approached by the nurses and medical officers. The whole ship was tainted, the air even in her fore chains, outside of her, smelt of him, and every one in her liable to contagion became affected. Inoculation was resorted to for protection as soon as the virus could be had. On the 14th day he died, was quickly wrapped up, and lashed in his cot, with four 18 lb. shot in the foot of it, then pushed over a gun, and thrown into the sea, through one of the nearest ports. No one save attendants witnessed the burial, and after all the articles used by him had been thrown after him, the deck was cleansed and sprinkled with vinegar.

After such care we hoped no other case would happen. The crew the day after had become as jolly as ever, and Miller's music was again heard. A sudden stop a second time was put to it. On the fifth day after Grant's death, Moses Nicholas, cook of the cockpit, was seized with the fatal disease, which was so violent that the eruption was suppressed, his skin became covered with numerous little pimples like those of flea bites, and he died on the seventh day, vomiting and purging blood. While he was gasping for breath, the jolly Williams, a fellow cook, who had had the primary fever, got out of his hammock, sat upon a shot box, and seeing his friend expiring, cried out, "a fair wind to you, Moses!" He then returned to his hammock; in a few days died of the fell disorder, and was likewise consigned to the deep. Five others shared the same fate, some after a short illness, others after a protracted struggle. Of the

former was Samuel Parker, a marine, whose skin became purple, put forth no pustules, and lost its cuticle in large flakes. Of the latter was Alfred Curtis, a sergeant of marines, who lingered a month, and died after suffering greatly from an enormous sloughing ulcer at the lower part of his loins, which had reached a large size before he complained of it, and it was discovered. Previously he had had ulceration of the left leg, and subsequently a large abscess burst beneath the chin. Altogether forty of the crew and officers took small pox in some form, from the mishap of taking Freeman on board. Of that number, seventeen had it naturally, three had it modified by inoculation, and twenty by vaccination. Some of these persons had it very lightly; one of them would not keep from duty, nor come on the sick list, and several had merely slight fever and a few pocks which soon disappeared. Of the crew, more than a hundred were inoculated as soon as the virus could be got, and only one of that number had the disease. But several afterwards had headache, pain in the loins, and immense scabs upon the parts inoculated. That on the arm of the first lieutenant, the present Commodore Salter, continued to grow until it was about the size of a half dollar, and yet he had no observable constitutional affection. The effects upon myself were simply languor and uneasiness in the loins. No one of those protected died, and those who were so by vaccination had the mildest symptoms. Desquamation in the latter came on soonest, and, in the worst cases, was completed in a few hours. Most of the natural cases were confluent, but one of them, that of Alex-

ander Neale, a young Tennessean, was remarkable for the very small number of its pustules, and their great perfection. He got well, and when with me in the Delaware, twelve years afterwards, retained no visible marks of small pox, which cannot be asserted of many who had only had varioloid. The last person who took the disease in any form was admitted on the sick list upon the 30th of September, or the fifteenth after the death of Grant. Thirty of the cases occurred within ten days from it, and within twenty from the time of the eruption being well developed upon him. We may therefore conclude that the period of incubation was on an average ten days, though sometimes not so long, as in himself, who shewed the eruption nine days after it appeared upon Freeman, unless the former caught the contagion from the latter during the primary period, or before the eruption was detected.

Treatment.—From the oppressed condition of the patients, and the malignant type assumed by the complaint in some of them, depletion was mostly avoided. No blood was drawn from any one, the bowels were gently evacuated with castor oil or epsom salts, and calcined magnesia; an emetic was given in four of the cases, three of which were cured; cream of tartar in solution for a drink, pills of calomel, pulvis antimonialis and opium were administered frequently. Sometimes the last was left out, and spirits of nitre and camphor were used. To remove the very acute pain in the loins, suffered in most cases, laudanum in large doses was prescribed. When the sick became prostrated, port wine sangaree, and an infusion of

powdered cinchona, flavored with elixir vitriol and tincture of cinchona, and having a fourth part of whiskey added to the water, were taken. The diet was farinaceous, consisting of rice and tapioca chiefly, and cooling drinks were allowed. As much attention as possible was paid to the general comfort of the sick, their mouths were freed of the viscid saliva collected in them and the fauces; their clothes and bedding were changed, their bodies washed; lead water and dressings applied to sore parts, and the three medical officers besides the care they took of the sick during the day, divided the night into as many watches, and attended to them during it, the surgeon taking the first one, assistant surgeon Henry S. Coulter, and myself, the mid and morning. But the sick were so crowded, on the gun deck, where all the worst cases were hung in cots and hammocks, to escape the heat on the berth deck, rendered greater by the ship's being between the tropics, and crossing the equator, that it was impossible they could all be made comfortable. The want of good bedding, the necessity of using linen almost as coarse as sail cloth, and a tempest of three days duration, from the south west, and near the line, rendered that more difficult. We were also not provided with as good a supply of medicines, provisions, and other necessities for the sick, as we should have been, had such an epidemic been anticipated.

In this way, then, we must account for the large proportion of deaths among those affected with natural small-pox; which, including that of Freeman, who was said to have died on shore, amounted to nine,

or fifty per cent. In the treatment of the cases which subsequently in various stages fell under my special care, the rule observed was to remove the most prominent symptoms as they occurred. If action was high, blood was drawn, generally, or locally, the bowels were well evacuated with epsom salts alone or combined with tartar-emetic. This was given afterwards, in the quantity of one-eighth of a grain with half an ounce of the spiritus mindereri every hour during the continuance of the primary and secondary fever; anodynes, as laudanum and sulphate of morphia in the dose of one-eighth of a grain, were taken to procure sleep and relieve pain; and lemonade, cream of tartar in solution, rice, barley water and flaxseed tea, were drank freely. Rice boiled in milk, soup, arrow-root, and other farinaceæ were allowed for diet.

In most cases a weak solution of acetate of lead in water was applied to the eyes to remove swelling and diminish the inflammation; gargles of stewed molasses and vinegar, borax, sage tea and honey, and of tincture of myrrh and alum and water, were used sometimes, and applied to the fauces to subdue irritation and remove the swelling, as well as to clear them of the accumulations of mucus and sordes. The whole body was sponged frequently with warm water, the feet bathed in hot, the pocks, especially those on the face, were early lanced and evacuated, the face was kept covered until well with a rag dipped in camphorated oil, to protect the former from air and light, the mouth was well cleansed, and the apartments of the sick were as well ventilated as necessary. From

the severe catarrhal symptoms attending the cases originating at Smyrna, expectorants were given in them, and a solution of liquorice and tartar emetic was found best adapted.

Severe local pains were relieved by leeches, and these were frequently applied to the temples and loins, which were always much affected in the worst cases of small pox.

By the above treatment, altered according to circumstances, the seaman, Wm. Reed, who caught the disease at Smyrna, was the only one who died, and his death may properly be ascribed, in part, to the small-pox having been preceded and accompanied with the influenza, which fixed itself on the lungs and larynx, masked the more dangerous affection, and rendered a greater loss of blood necessary than would have been drawn had he been affected with small-pox alone. He was bled three times within the first four days of his illness, had six leeches applied to the larynx, twelve to the small of the back, and sixteen to the temples, to relieve him of delirium. Altogether he lost from the arm forty-six ounces of blood, and about seventeen by leeches, reckoning that each one drew half an ounce, which is a moderate allowance for them. Notwithstanding the loss of so much blood, the inflammatory symptoms kept up almost without intermission; the face and throat swelled, the pustules formed and were confluent, on every part of his body, and he lived ten days after he was taken under treatment.

CHAPTER VII.

Measles; Rarity in Vessels; Treatment followed. Parotitis; Occurrence in two Frigates; Treatment of it and Tonsillitis; Local and General Remedies; Operation performed for the cure of the last mentioned.

During my whole term of active service, I have only known the crew of one vessel to be affected with measles, and that was the crew of the Delaware, who were infected at Norfolk just after she fitted out. The disease soon became epidemic, and was still lingering in her when I joined her three months after it first appeared, but the cases were two old convalescent ones. It principally attacked the boys, was accompanied with ordinary symptoms, fever and soreness of throat and eyes, but these were sometimes most affected, and remained inflamed for a long time. Indeed, so much ophthalmia preceded, accompanied and followed the measles, that they seemed to have tainted the eyes of many persons in a most extraordinary manner. For though the measles were without exception cured, yet the ophthalmia was the most obstinate ever met with by me. Some of the cases were perfectly incurable, the conjunctiva, becoming granulated and chronically inflamed. Local and general depletion, astringent lotions of the greatest reputation, citrine ointment, the nitrate of silver, and all other remedies thought appropriate, were tried in vain. Consequently some of these cases had to be sent on shore before the ship sailed, and others to the

United States after she arrived in Brazil. With the exception of these cases, I have very rarely failed in subduing ophthalmia by means of the medicines specified; weak solutions of sup. acet. of lead, the nitrate of silver, and sulph. of zinc, warm bathing, cathartics, antimonials, blue mass in moderate quantities, and by occasionally using leeches and poultices to the eyes, and blisters on the nape of the neck. Setons also were employed in some cases of the worst kind with doubtful efficacy, and bathing with warm water in those of every class, as it was much more soothing than cold. The former lessens action relaxes the inflamed parts, causes a free secretion from the meibomian glands and eyes, renders them more sensible to the action of cold, or astringent lotions, and thereby indirectly produces a tonic effect. When inflammation ran high in the above and like cases, scarification with a lancet on the inside of the lids was frequently performed. In some instances, however, it seemed to increase rather than diminish irritation, either from the great sensitiveness of the parts, or from an increase of tears having been caused to flow over the incisions.

For the cure of measles, the remedies most prescribed were cooling drinks, seidlitz powders, and other gentle cathartics. Collyria, alum gargles, and brown mixture were given to the patients whose eyes, throats, or respiratory organs were much affected.

Into two of the ships mentioned another contagious disorder was introduced—the mumps, or parotitis, technically speaking. The first ship infected was the United States, and it was thought at New

York, as she sailed from thence, though the disease appeared on the seventeenth day afterwards, and when she was two-thirds across the Atlantic. The period of incubation, therefore, was nearly three weeks, if not more, unless the disease originated on board, which is improbable. The first case was that of a man who had the usual symptoms and was cured of them, but seized with orchitis twelve days after he was taken under treatment. Another man had mumps in a reverse manner, the right testis having been tumefied and inflamed before he had the parotids sensibly affected, and the jaws made stiff. In a third case, the submaxillary glands were also enlarged, and as much, if not more so, than the parotids. Altogether, twenty cases happened, and the last one upon the 28th of August, that is sixty-three days after the appearance of the first case. Most of them were of a mild kind, but six of them were attended with orchitis of one or both testes, and the average cure was effected in seven and a half days. The youngest patient was seventeen years old, and the eldest thirty-eight years. Three more persons were above thirty, and ten were from seventeen to twenty-two years old. In the Savannah only ten persons had the disease; the youngest was a marine drummer of ten years, and the eldest a seaman of twenty-eight. Most of these cases were also of a mild character, and all were undoubtedly owing to contamination at New York, where the ship was when the first took place, though three did so at Boston, and four others after she sailed thence for the Pacific. In each vessel the disease seemed to continue

until every person liable to it had been affected, for the last one in the United States taken sick was in the Archipelago, and the last patient in the Savannah when she had been at sea 137 days, and was near California. The average period of cure for the cases in the latter frigate was short of six days, although several of them, from the severity of the cold, were accompanied with tonsillitis.

The ordinary treatment was to give epsom salts and tartar emetic in combination, to purge well. Sometimes castor oil was given, or an emetic of ipecac, and tartarized antimony, when the testes were attacked. Afterwards the sick took the spiritus mindereri, or a solution of the last named medicine, rubbed the volatile liniment over the parotids, and wore hot linseed poultices over them. Their diet was low, their drinks cooling when fever ran high. In two cases this happened to such a degree as to demand free venesection, and in those where the parotids and testes were much inflamed leeches were applied. When the testes were attacked, blisters were occasionally substituted for volatile liniment to the parotids, and an evaporating lotion of water, alcohol and sup. acet. of lead was applied to the former instead of poultices. By the use of the above remedies all the cases were cured, but one of those in the United States was under treatment twenty-eight days, from being complicated with catarrh as well as orchitis. In the cases accompanied with tonsillitis, gargles had to be used, and I also, agreeably to my practice in that disease, lanced the tonsils freely. This very much shortened the treatment,

and relieved the patient of pain and difficult deglutition, by discharging the blood vessels and preventing swelling and suppuration. In fact, freely lancing the tonsils does in a few minutes what may require days or months to accomplish with medicines. It also prevents the part from remaining indurated and swelled after the inflammation has subsided, and saves thereby the necessity of excision. Were this practice generally adopted, in conjunction with appropriate medicines, the above operation would become almost obsolete. Certain it is, that I know of no instance of its having been required after I had treated recent tonsillitis—and many cases have been seen by me—of persons who had enlarged tonsils, ascribable to the neglect of incisions into them while inflamed. To make them, a lancet firmly fixed between the two sides of the handle was most used, but the blade is apt to turn to the right or left, and is too short to reach the glands unless the fingers holding the instrument are partly thrust with it into the mouth. For these reasons, a small straight scalpel is preferable, and the patient having had the lower jaw and tongue firmly depressed by means of a spoon handle or spatula, without being thrust so far back as to cause gagging, the point of the scalpel should be passed directly through the projecting portions of the glands. By doing this, a copious flow of blood will be obtained without danger of puncturing the external walls of the fauces and cutting the internal carotid arteries in their passage to the base of the cranium. Such an accident could only happen from great carelessness, awkwardness, or ignorance of the

anatomy of the parts, and is not more liable to occur than that of leeches—recommended by some—getting into the stomach or larynx, either before or after application. These reptiles likewise are very disgusting and horrifying to many patients, even when they are externally applied, and few would submit to their being introduced into their throats. This difficulty might be obviated by their being used externally, but they would be less efficient then, and would have to be applied in larger numbers, which would be very objectionable where they are scarce and the patients poor, or the leeches very dear, as at Lima, in which city they cost a dollar a piece by the hundred. At sea, too, it is difficult to keep a supply of them; often they cannot be had for any price, and for these, if for no other reasons, it is preferable to employ incisions. But although these possess such efficacy, they were not relied on alone, were frequently not required, and always assisted by medicines. The gargles mentioned were used, likewise some made of the nitrate of potash dissolved in sweetened water, in the proportion of $\mathfrak{z}\text{i}$. or $\mathfrak{z}\text{ij}$. to $\mathfrak{z}\text{ij}$., and others of Cayenne pepper, molasses and vinegar, and of like proportion. In the majority of cases, however, a gargle of $\mathfrak{z}\text{ij}$. of powdered borax, $\mathfrak{z}\text{i}$. of honey and $\mathfrak{z}\text{viiij}$. of strong sage tea was found the most pleasant and useful, and most prescribed. In severe cases, antimonials and other diaphoretics, cathartics, frictions over the throat, and hot pediluvia were used. Hot poultices applied externally to the affected part after friction with volatile liniment and turpentine or some other stimulating one, afforded

much relief, and the same benefit may be derived from filling a small bag with wood ashes, wetting them with warm ley, and fastening the bag about the patient's throat while he is reposing. This is a domestic remedy which I have seen used in country practice, but a very good one, from its combined fomenting and stimulating properties, which promote perspiration, and divert irritation from the fauces to the integuments.

CHAPTER VIII.

Diseases of, the Respiratory Organs; Immediate and Remote Causes; Means of Prevention. Frequency of Catarrh, Sporadic and Epidemic, or Influenza. Pleurisy. Pneumonia. Phthisis Pulmonalis. Interesting Cases and Lesions found on Dissection.

Notwithstanding the strict examination of seamen before their admission on board ship, there are no class of persons who suffer more from the above complaints. This may be ascribed mainly to their great exposure to every vicissitude of weather, their often being wet with rain or sea water, neglecting or not being able to change their clothes, and when chilled not having it in their power to warm themselves by any artificial means. When on watch, too, they are very much habituated to lying down on the decks, and even beneath the sails, reflecting down upon them the strongest currents of air. Likewise, seamen when sleeping below decks, and the air presses down through the hatches and into the ports, are very liable to take cold. This, moreover, affects them from its constant application, and being accompanied always with more or less dampness, either in the external air, or in that of their vessels. These likewise shift like the weather, and so often pass from hot to frigid climates that their crews suffer thereby as they would from exposure to vicissitudes of weather, and when remaining in any fixed place. Owing to these causes seamen are liable to every species of disease which affects the lungs, their air-passages and invest-

ing membranes. From neglect and want of proper medical attendance, many of them are prone to be severely and chronically diseased. Organic changes necessarily follow, and cures are more difficult of attainment. Upon the inspection of the diseases which occurred in three men-of-war—two frigates and one ship of the line—of which I was surgeon, I have found that in one of the former 265 cases of catarrh, alone, took place. In the other frigate there were 106 within 18 months, the period I was on board her; and in the Delaware, the ship of the line referred to, which had a crew of 840 persons, 232 cases occurred, although she spent more than a year between the tropics before she went to the Mediterranean. During the entire cruise of two and a half years, 23 of her crew had phthisis pulmonalis, of whom twelve died; eight on the Brazil station, and four after she left. But one of the former died in a merchant vessel before she got clear of the coast, and one of the latter either at our naval hospital, Port Mahon, or in returning home. Of the crew of the United States, the first frigate referred to, ten had phthisis, of whom eight died, four on board, and four at the above hospital under charge of another surgeon than myself, but in the Savannah, the second frigate, merely three cases of the disease happened, of which only one was fatal, that of a supernumerary who came on board of her in California for treatment. The comparative exemption of her crew from the disease is ascribed to the great care in selecting from it, and sending on shore at Boston, before she sailed, all persons who were believed to be of unsound constitution. The

great reduction in the number of her crew on her arrival in the above country, also served to render the number of cases proportionally less, and we must likewise ascribe the small amount of these and other cases of pulmonic diseases to the avoidance of wet decks, keeping the vessel continually of moderate temperature by the use of stoves in her, and the receiving ship, Franklin, to which the crew were transferred while the Savannah was in the dry-dock undergoing repairs. But the cold was so intense, the air so humid, when the wind blew from the north-east and east, that eleven of them were affected with pleurisy, between the 12th January and the 4th of March, 1849, the period included within the time of her arrival off and departure from Boston. No deaths took place among these cases, and a very small number of other pulmonic ones, except phthisis, in the above and other vessels terminated fatally. Among these cases was the one of pneumonia, in the Brandywine, followed by mortification of the lungs, and another accompanying a violent remittent fever, off the coast of Syria, and in another frigate. From catarrh no death directly happened, but one of the fatal cases of phthisis was traced to it, and one of hypertrophy of the heart in the Delaware which ended in like manner, two months after the patient contracted a catarrh in the form of influenza, which attacked the crew in the first week of September, 1843, while she was at Naples. More than sixty of them were affected at the same time with the complaint to such a degree as to be rendered unfit for duty. Many others were affected moderately and were not taken on the sick

list. What was most remarkable respecting the disease, was, its prevalence during warm and fair weather, without any great change of temperature, Fahrenheit's thermometer having been at 76° , the day before the influenza appeared; at 73° on the same day the three first cases were admitted, and only at 71° upon the 10th of September, or three days afterwards. The thermometer fell a fraction on the day the disease appeared, at the same time the wind blew freshly from off shore, and the Appenines, and raised by its great dryness the hygrometer to a most extraordinary height. As no rain had recently fallen, a whitish impalpable dust was blown to the ship, covered her rigging, and caused the sailors to think it was sulphur ejected from Mount Vesuvius, although the wind was north-east, and the latter bore almost south-east. They likewise concluded that the dust being sulphur must have occasioned the epidemic.

On board the United States the atmospheric phenomena were different. The air had been damp and chilly, the wind was variable; the thermometer was at the freezing point the day we entered the gulf of Smyrna, and snow covered the adjacent mountains. But on the 26th of January, 1837, the day before she left that port, and three weeks from the former period, the thermometer was at sixty-one degrees. The number and violence of these cases in this vessel corresponded with the extremes in temperature. One hundred and twenty-six of the men were affected with catarrh in such a severe form as to have been taken on the sick list between the seventeenth of January,

when the complaint began to assume an epidemic form, and the 12th of February, when it ceased to be so, and the vessel arrived at Port Mahon.

On the 27th of January ninety men, including officers, were on the list, and almost the whole number had the complaint, some moderately, others violently, and accompanied with high fever, acute pains in the head, chest and limbs, and delirium. Among the latter was an officer liable to hereditary insanity, and who has been a maniac ever since. His mind had been previously wavering between sanity and insanity, and lost its balance when catarrhal fever attacked him. In these cases, as well as those of the same kind in the Delaware, venesection was employed; leeches were applied to the temples, cups and blisters to the chest, when it was much affected; pectorals, anodynes and diaphoretics were prescribed; but in a vast majority of patients I effected a cure in a few days, often in a single one, by first giving an ounce of epsom salts and one or two grains of tartar-emetic in $\frac{3}{4}$ viij of water at several doses; then by administering a solution of the latter medicine in the dose of an eighth of a grain in simple water, but generally, as being most palatable and soothing to the throat, when flavored with sugar, gum arabic and extract of liquorice. This pectoral was given every hour, or at intervals of three or four hours, and was aided by some hot herb tea, as that of catnip, marsh-mallow and horehound. Balm and eupatorium were also freely used by me in such cases, and for producing copious perspiration the latter is unrivalled by any of the other herbs mentioned. To promote the

diaphoretic effects of all of them, the feet were well bathed in hot water ; and as this also produced a revulsive effect on the brain, it composed this and caused the sick to sleep soundly. The bath, moreover, helped to relieve coryza, which was often very profuse, from the inflammation of the mucous membrane of the nostrils being very intense ; but in these cases, the direct application of steam or hot water to them several times a day was most effectual, from its inducing a profuse secretion of mucus and disgorging the capillary vessels. A few grains of super-acetate of lead or sulphate of zinc render the hot water still more effectual. The steam of vinegar or brandy is likewise beneficial, but I prefer that of water. This, moreover, I have found best to relieve otitis, which sometimes attends catarrh, and for its cure may be applied by means of a hot brick wrapped in a damp towel.

Several cases of pleurisy and one of pneumonia occurred in the frigate United States at the same time with the influenza, and were cured by copious venesection, cups and blisters to the thorax, and other remedies enumerated. In the treatment of the last named affection, the spiritus mindereri and neutral mixture with tartar emetic dissolved in them, and the nitrous powders containing this medicine, in the quantity of an eighth of a grain, with one grain of calomel in each powder, produce a happy effect. The three first named articles promote sweating and expectoration, open the bowels and reduce the pulse, while the last named decreases the plastic property of the blood and causes the absorption of any effusion

which may have occurred in the lungs, or within and upon their pleural coat and that of the ribs. By observing the above practice with some variations, none of the above cases of pleurisy and pneumonia ended fatally, and no others, except two private ones to which I was called in the last stage, and which had been unattended by any physician. One was that of a marble mason, who persisted during a rainy, chilly day in polishing one of the columns to the portico of the Naval Asylum. A violent inflammation of the lungs, bladder, and almost every tissue of his body supervened; and having been allowed to rage unchecked, every affected part became so injected with red blood as to appear to have been done by artificial means. The mucous coat of the bladder was the most peculiar, from being of a scarlet hue, covered with dark red spots.

The other case was that of a citizen of the island of Milo, south of Greece, and to whom I was called during a transitory visit to the town, in April, 1833, while surgeon to the John Adams. Although the island contained some thousands of inhabitants, there was not then a single physician among them. The patient had therefore received no proper medical attention, was in the last struggle for existence, and gasping loudly for breath in a low bed at the back of a dark room. A crowd of women, wrapped in white muslin mantles and dresses, stood around the bed, and holding flaming torches in their hands, were mournfully looking on at the dying man. He laid, apparently unconscious of their presence, upon his back, making imperfect inspirations and expirations;

his face was sunken, pallid, cadaverous, his pulse was rapid and bounding, but sinking. There was not the least hope of his recovery, yet I prescribed, through an interpreter, what seemed calculated to comfort him, and had to hurry away before the awfully tragic scene had terminated, lest darkness should overtake me before the landing place and ship were reached. Her distance from the shore, and this from the town, prevented me from making any attempt at a post-mortem examination, and had it been convenient to make one, the friends of the deceased would probably have refused it. From the symptoms, too, the morbid changes, I judge, would have been similar to those just described, from this man having had the disease also unchecked. The changes found in the dissection of the seaman, mentioned as having died of hypertrophy of the heart succeeding catarrh, were the following. The whole organ was much enlarged, its left ventricular openings were expanded, the chordæ tendineæ and columnæ carneæ elongated and thickened, the aorta was expanded and gritty, the pericardium contained several ounces of serum, and the left ventricle was filled with dark blood. The right lung adhered to the ribs; its bronchia were expanded; it contained some tubercles and purulent matter, and within the pleura were about two pounds of serum. The liver was indurated, of a greyish red color like porphyry, and much engorged. The gall bladder was small and filled with dark bile; the pancreas indurated and enlarged; the mucous coat of the stomach congested and somewhat softened.

From these morbid alterations, his age, which was

fifty, his habits as a sailor, and his not having complained before attacked with catarrh, of any cardiac, or other disorder, to my knowledge, the following conclusions were drawn : that by long continued indulgence in ardent spirits, the liver, pancreas and stomach had been affected, and the two first indurated insensibly ; that the circulation of the blood having been partially interrupted, the heart then commenced to enlarge, and the influenza afterwards having seized him, that organ, the right lung and pleura, became actively inflamed. This was very clearly indicated by the great fulness, frequency and strength of his pulse, great dyspnoea, pain in the chest and other symptoms, which caused me to bleed him copiously twice within the first three days after he was taken on the sick list, to bleed him moderately once towards the close of his life, and to administer the tincture of digitalis, squills, antimonials, tr. assafoetida, extract of stramonium, and other anodynes, besides making local applications over the diseased parts.

In the treatment of phthisis, of the tubercular or other kinds, the above remedies with a variety of others were employed, but the result as stated has already shown that they often failed in my hands, as they have done in those of many more physicians. Relief was certainly obtained by using these remedies, the patients were at least made more comfortable, but in all climates consumption had its full quota of victims, in spite of cod liver oil and every other specific recommended. But in some cases I was gratified by success. Two of them were, that of a marine who had been completely prostrated by

phthisis and its accompanying chronic diarrhœa, and the other that of a seaman just returned from a cruise in the East Indies. But his case was not one of tubercular phthisis, and was thought to have been induced chiefly by an adhesion of the upper convex surface of the liver to the diaphragm and inflammation extending from it into the right lung. An abscess formed in this, a large quantity of thick whitish pus was discharged day after day, and finally became so tinged with green, as to permit no doubt that bile was being effused from the liver through an ulcerated passage extending through the diaphragm into an adhering portion of the lung. This patient, John Ward, was and is now, a pensioner in the Naval Asylum, of which I was surgeon when he was treated. He was cured chiefly by means of tincture of digitalis, gum ammoniac and other expectorants, blisters to the chest, tartar emetic ointment as a dressing, and pills of blue mass. The other case was cured, at least sufficiently for him to resume his duties, by the internal use of a solution of sulphate of zinc and sulphate of morphine, in the proportion of one grain of the former to $\frac{1}{8}$ of the latter 3 or 4 times a day in a half ounce of water, and by injecting the same compound into the rectum to check the diarrhœa.

While I was at the Naval Asylum, another uncommon instance of phthisis occurred in the person of Wm. Williams, a one legged pensioner, of intemperate habits. He was under treatment for six months, had taken various pectorals, composed of tinc. of tolu, gum ammoniac, acetate and sulphate of morphine; had worn a tartar emetic plaster, and for a long

period had his wasting frame supported by bitter infusions and quinine mixture. In the mean while he expectorated a large quantity of pus, and discharged almost as much from an abscess over the anterior face of the right ribs. Upon death having occurred, an autopsy was made to ascertain what connection existed between the internal and external abscess, and to discover what other morbid changes existed. Four of the true ribs, the third, fourth, fifth, sixth and seventh, were found to have formed the base of the external abscess, and beneath the third and fourth ones was the abscess in the lung. No direct communication was discovered between the two abscesses, but it was thought that the trace of it had been removed by the knife and saw used in dissection. The cartilages were ossified, and one was separated from its rib by caries. This was plainly owing to the pulmonic abscess behind it having had its contents brought into contact with the bone and cartilage. The external abscess having discharged its fluid contents through the fistulous orifice which had so long existed, contained only some cheesy matter. The right lung had a small quantity of water effused in it, and the left lung had much contracted in size, was filled with tubercles of a blackish grey color, adhered closely to the ribs and cartilages, so that the pleura costalis and pulmonalis were merged into one and undistinguishable, and the lung in its antero-posterior diameter was merely about one inch and a half in diameter. The liver was very small and blanched at its lower edge, but the right lobe was elongated

downwards into a flap three inches long, and its structure otherwise normal.

In conclusion I will state concerning this patient, that he had an attack of hæmoptysis a year before he was treated for phthisis, and was nine days under my care for the former.

Six other patients at the Asylum besides those spoken of had phthisis during my last term of service there, and one died of it before it was opened for the reception of pensioners, and while I was assistant to our late distinguished chief of the bureau of medicine, Dr. Thomas Harris. The latter patient was a seaman who, while dying, nobly offered, without any request or persuasion, to let me "do with his body after death as was thought fit." Accordingly it was examined. His lungs were found filled with tubercles, but the right one, as I have seen in most dissections, was worst diseased, containing several vomicæ, and being totally disorganized. Of the six other cases three ended in death, and one within twelve days after it was first treated. This case was an obscure one. The patient was 65 years old; came on the list, and was treated for a cough and diarrhœa of great obstinacy, which seemed the chief cause of death. He was much prostrated, and in conjunction with an expectorant and opiates taken by mouth and used as enemata had to be prescribed, pills of sulphate of quinine, and an infusion of pulv. cinchonæ, colombo, ginger and orange peel. For cough, and shortness of breath of an asthmatic kind, he was also given a tartar emetic plaster to be worn over the chest. The infusion having appeared to

purge, was combined with laudanum, and xx. drops were taken in each dose. Opiate enemata were prescribed *pro re nata*, the diarrhœa having become worse. It was impossible by these or other medicines to sustain him; the stools became watery, his excretions of all kinds offensive, and he expectorated some greenish pus ten days before his decease. Upon examining him, both lungs were found adhering to the ribs, filled with tubercles, collapsed and shrivelled. The right lung, however, as expected, was worst, for it contained many vomicæ of small size, and adhered to the ribs by strong tendinous bands. The small intestines and stomach were inflamed chronically, and the latter had its mucous coat atrophied, of a dark red color, and deprived of its cryptæ and folds. The liver was blanched and indurated, and had its acini indistinct. But the most unnatural phenomena were the thickening and softening of the parietes of the heart, and the perfect adhesion of this to the pericardium, no interstice having been left between them. No instance of this kind had ever before fallen under my notice, nor has another been since seen by me.

Another pensioner, named Wilhelm, a foreigner, had long been gate keeper at the Asylum, and was remarkable for his florid complexion, slender and agile form. He came on the list with a slimy diarrhœa and inflamed eyes. His tongue was thickly furred, his abdomen sore to the touch, and he had had a cough for some time; but little notice was taken of it until he had been on the list for three weeks and expectorated a quantity of glairy, greenish mucus. The stethoscope was then applied, and detected a mucous

rattle. His bowels up to that time had attracted chief attention, and been restrained by first giving a dose of pulv. rad. rhei, magnesia and laudanum, and afterwards several sorts of pills, besides some tinct. of kino and tinct. cinchona compos. as he had been a free drinker. The pills were of ipecac. and opium at first, then of these articles and blue mass, and last of the former, calomel and essence of peppermint. Two days after his admission he complained of being very weak, and was directed two doses a day of a quinine mixture and a pill at night. He likewise was given an infusion of cinchona, colombo and ginger, with tincture of opium, a brown mixture for his cough, some opiate enemata, pills of quinine, opium, and essence of peppermint. A Burgundy plaster put on his chest, and a flannel bandage around his abdomen. Nothing availed; he died twenty-five days after taken in charge.

Autopsia.—Two ounces of serum were in the pericardium, the lungs adhered in every part to the ribs; when cut into resembled grayish granite, were filled with tubercles beginning to suppurate, but the right lung was most diseased. The stomach was distended with flatus, its mucous coat was deficient, being about the thickness of brown paper; was softened, and easily scraped off with a knife handle; the folds and villi were almost invisible, and slight inflammation existed in the cardiac orifice. Three ulcers were seen in the jejunum within a foot of one another, and completely perforating its coats; the peritoneal coat of all the small intestines was inflamed, slightly in most parts, but greatly in some from the effusion of

fæces into the cavity of the peritoncum. The liver was enlarged, indurated, nearly white, and deprived of its acini ; the spleen was indurated, but weighed only about three ounces, was merely two and a half inches long, one thick, and one and a half broad, and contained no grumous blood. The bladder was contracted and blanched, its coats were thickened, the left kidney was enlarged, of a light red color, and nearly as hard as dried beef, and the right kidney, though of natural size, was of the same consistence.

Such were the effects of disease on this poor old sailor, aggravated by a long-continued abuse of ardent spirits—the greatest of all curses to his fraternity, and destroying more of them than become victims to the tempests or the billows of the ocean.

CHAPTER IX.

Diseases of the Abdomen. Food of bad quality a chief cause of them. Indigestion. Colic; Treatment of severe cases. Diarrhœa, Dysentery and Cholera; Causes and Remedies; Regimen to be observed in their Cure. Asiatic Cholera as it occurred on board the U. S. Ship John Adams, at Constantinople. Effects of Constipation. Enteritis. Influence of Sea-sickness, with means of prevention and cure; Autopsia in a case of the former.

The first of these claiming our notice are those of the digestive organs, which form a very numerous class among seamen. This is occasioned by their coarse, often unwholesome food, and by its irregularity, at one time being scanty and poor, at another abundant and rich; sometimes consisting of animal food dried and salted, with a scanty proportion of vegetable, at others of the latter principally with fresh meats. From this irregularity in the supply of food, their fondness for ardent spirits and tobacco chewing, they are often affected with dyspepsia, colic, cholera, and other diseases of the alimentary canal, especially diarrhœa and dysentery, which, as before stated, are also frequently owing to bad water. My remarks concerning this were so full that further ones are unnecessary. Confirmed dyspepsia is not so common among seamen as temporary, induced by excesses and irregularities in diet. Hence, by giving an emetic of ipecac. alone or with tartar emetic, disgorging the stomach and then administering some antacid, the patients are soon relieved, if they will at the same

time eat moderately of digestible food not subject to fermentation, as fresh lean meat, rice, and stale leavened bread made with good flour, yeast, sup. carb. of soda or potash. But on board ship these articles cannot always be procured; good bakers are scarce, and facilities for cooking few. Hence, biscuit for a long period made is mostly eaten, is often very hard, damp, wormy or mouldy, and proves difficult of digestion, if not put again into an oven and dried, as recommended in my remarks upon naval hygiene.

When the indigestion is attended with disordered liver, and there is deficiency or excess of bile, I give a mercurial, usually the blue mass at night, and the next morning a scruple of pulv. rad. rhei., and a half drachm of magnesia urta with some essential oil, that of peppermint or cloves. That of aniseed is likewise a very agreeable one. In cases accompanied with pain, some anodyne becomes requisite, and it is then well to make a solution of magnesia alone and add the latter, with the essential oil, to it, and to give them in divided doses at suitable intervals. When costiveness attends, other laxatives, as pills of rhubarb, aloes and castile soap, or of calomel and extract of colycinth will be beneficial. Castor oil, by its not being so apt to be followed by costiveness, may be preferable in some patients, but it is too offensive to others, and so cloying to their stomachs after its operation that it cannot be taken. Should the indigestion be succeeded by positive colic more active measures are to be taken, and when a firm impaction of fæces has taken place in the bowels, it is my practice not only to give laudanum, sulphuric

ether, essential oils, camphor and opium to relieve spasm and pain in them and the stomach, but combine them with epsom salts and other purgatives, and make a free use of cathartic enemata, to prevent the above remedies from causing greater constipation by their narcotic influence upon the bowels. The above salts, dissolved in the proportion of an ounce to a pint of molasses and water, flaxseed or senna tea, I mostly employ in a tepid state, and repeat until the large intestines are completely evacuated. But when the fæces are much hardened by being deprived of their moisture, or when consisting in part of undigested food accumulated at the ilio colic-valve, and distending the cœcum, I have found the ordinary enema syringe not efficient, unless elongated by having a large gum elastic tube, such as is used in pumping out the stomach, attached to the mouth and thrust through the rectum into the sigmoid flexure as far as the arch of the colon. By adopting this plan, relief was obtained in cases where death would have probably ensued, from the vast quantity of hard boiled eggs, grape seed, cheese and other indigestible substances blocking up the head of the colon. A most uncommon instance of this occurred in an old seaman on the coast of Syria, who had indulged himself to satiety in eating the above articles. On the day he was taken sick he took 70 drops of laudanum by the mouth and ʒiss. by the rectum in flaxseed tea, and lost ʒxxx. of blood from the arm without being relieved. He was then given three doses of sulphuric ether and laudanum, then calomel and opium *aa.* gr. i., camphor grs. v. every hour, by which means tempo-

rary relief was obtained and he fell asleep. The next morning his pulse was frequent, the tongue covered with white pus, his abdomen tense and painful, especially in the right lumbar region, which was very sore when touched. Twelve leeches were applied over the right side of the abdomen, two enemas were given, each consisting of molasses one gill, epsom salts ʒf.s. , water one pint. He also took by mouth epsom salts ʒi. in divided doses, used rice water for drink, and had bottles of hot water applied over the abdomen. His bowels were still not opened, and a half gallon of warm water was thrown up then in two enemas with like unsucess. Two, each of a pint of senna tea and a half ounce of epsom salts, were next given, and at the same time small doses of these and tartar emetic were prescribed; but they brought on great nausea, made him eject a large amount of undigested food and a lumbracoid worm six inches long, and were discontinued. Before and after vomiting his bowels were very freely evacuated, but he was not relieved; several doses of laudanum and essence of peppermint were prescribed, and on the third day twelve more leeches were applied; he took another enema of senna tea and salts, by means of a gum elastic stomach tube about eighteen inches long, and an hour afterwards a vast quantity of the above things, in an undigested condition, were discharged. These were succeeded by watery stools, natural pulse, clean tongue and softness of the abdomen, though its tenderness continued. On the fourth day no medicine was required, but before he was entirely cured of the enteritic inflammation suffered, he had to take

more ether and laudanum, to use a warm bath and a blister to the abdomen, to take one enema of molasses and rice water, a dose of magnesia and rhubarb, a half ounce of salts and some laudanum and essence of peppermint. A poultice and six other leeches were put upon the abdomen; their bites causing ulceration, the former was washed with lead water and dressed with simple cerate. In the interim the patient was nourished with rice and barley water, sago, properly seasoned; finally was allowed soft boiled eggs and other nutritious food. Under this treatment he was cured, but from suffering uneasiness in the right lumbar region he had to wear a Burgundy plaster over it, and after the elapse of some months he had another attack of colic, which was so severe that he suffered an inguinal rupture while at our hospital in Port Mahon.

In the history of his case we have a specimen of the worst forms of indigestion met with in seamen, and of the remedies generally used by me in their treatment. It is therefore not requisite for me to speak of that adopted by me, for cases of a milder kind, and induced by the ordinary, least digestible portion of their rations, as beans and duff, their pudding, which is composed of raisins, bits of fat salt pork and flour boiled in a bag, and eaten with molasses, or without, according to the palate of the masticators. I will then proceed to speak of what they suffer from an opposite state of the bowels, as diarrhoea, dysentery and cholera, both that arising from chronic, irritating, or too abundant ingesta, and that of an epidemic character and termed Asiatic, from the

country in which it originated. Few ships are so lucky as to escape from being scourged by the two former complaints during a long cruise between the tropics and in other parts. Of the strong agency water and certain articles of regimen have in causing these affections, we spoke when treating of hygiene. Besides these causes we may mention cold and the suppression of perspiration, particularly in summer and in tropical regions, when it is hot during the day and chilly at night. Excessive heat, too, produces bowel complaints by causing a great secretion of bile, which being ejected from the liver and gall bladder into the intestines, creates irritation and undue action.

In the treatment of the common diarrhœa, abstinence from the usual rations, avoidance of fruit, fresh or dried, and a farinaceous diet was directed, at the same time that pills of simple opium, or this and ipecac., the tinct. of opium, or some other anodyne were given. But when the cases were severe the super-acetate of lead, the sulphate of zinc, and sometimes the tinct. of kino, tannin and opium in pills, were taken by mouth, and anodyne enemata employed. The latter were sometimes most efficaciously combined with the sulphate of zinc, which is well suited to remove inflammation and ulceration of the rectum. Given by the mouth, this valuable medicine both produces this effect on the upper portions of the bowels, and invigorates the whole system by its tonic action. From its possessing these virtues I prefer it to the nitrate of silver, which, although it may have similar ones, is apt to discolor the skin, is too corrosive in

its action, and occasionally excites violent inflammation in mucous membranes. To these effects I ascribe, at least, the continuous inflammation seen in the whole alimentary canal of a patient I saw examined after death, at a private hospital in California, and which evidently existed in that of another patient dying of this disease, or medicine, in the same hospital, where it was given in enormous doses.

The former remedies were sufficient, in a vast majority of cases, to effect a cure, and the latter pills exercised a powerful effect by their astringent and anodyne properties. They were generally made by adding 12 grains of tannin to six of powdered opium, four drops of oil of cinnamon and as much mucilage as necessary. These pills were given as often as the symptoms required.

In cases of dysentery similar practice was adopted. The above medicines were used, and many more of like and different properties. On the Brazil station, from the debility induced, both by the disease and climate, it was requisite to make use of tonics and bitters, as the infusion of cinchona, the sulphate of quinine, the extract of quassia, infusion of colombo and gentian united with the tinct. of opium, or some other anodyne to prevent a cathartic effect. Venesection was practised when much pain existed and there was high fever, and emetics of ipecac. and tart. emet. given to remove nausea and unload the stomach, in some cases. But in most of them I found that a cure was effected very promptly and certainly by first giving a dose of castor oil and laudanum, or one of calcined magnesia

and rhubarb, or of epsom salts and magnesia, and afterwards pills composed, each, of one gr. of ipecac. and one of opium, flavored with the oil of peppermint or other essential one. These were given every three or four hours, and when not effective, assisted by opiate enemata. When the liver was thought implicated, calomel was added to the pills, or the blue mass administered. Pills, also, of acetate of morphine, the super-acetate of lead, alone, or combined with opium were prescribed in some of the worst cases, with decided benefit. Of late I have not much used mercurial preparations, as the disease was cured as readily without them, and this seemed to me to do harm by exciting too free a secretion of bile, causing an ejection of it into the inflamed intestines, exciting increased irritation and purgation. A medical officer, who had many persons to treat on board a ship of our East India squadron, told me that he found calomel highly injurious in dysentery, and much preferred the super-acetate of lead. He likewise spoke in high terms of the application of leeches about the anus. But this is a disagreeable application to attendants and patients, and cannot be resorted to without great inconvenience, where they are obliged to go often to stool. Poultices, stimulating frictions, cups, leeches and blisters to the abdomen are for the above reasons to be preferred. I likewise frequently wrapped the patients' bodies with a flannel roller, always required them to keep in their cots or hammocks, lest their erect posture or walking should disturb their bowels. Great care was, moreover, taken with their diet, which was in great part farinaceous.

as sago, arrow root and tapioca, made into a gruel and seasoned, or rice water made as thick as possible, so as to get out all the nutritious portion of the grain, and then flavored with sugar and nutmeg. This article of food, as before observed, was preferred by the sick to any other, and at the same time that it nourished them, exercised a soothing and astringent effect upon the alimentary canal. On the coast of Brazil, however, I used tapioca flour largely, which is called there arrow root, from which it cannot be distinguished easily by any person, and not at all by many. This flour is made from the expressed juice of the tapioca root after it has been cut to pieces by rotary graters turned by water wheels; differs from the tapioca of commerce only in not being granulated, and was sold for merely eleven cents a pound, a much lower price than the real arrow root commands. Even during convalescence this regimen was observed, and great care was taken to prevent the sick from drinking impure water or the purest in large quantities. In place of it, when thirsty, they drink rice water willingly. By following the above mentioned practice, modified agreeably to place, person and condition, dysentery was readily cured, and the same may be said of its kindred complaint, diarrhœa, for on examination of the records of 239 cases, only two are noticed as having terminated fatally. One of these was that of a seaman who was seized with dysentery after returning from a frolic in Rio Janeiro, had hepatic disease combined with it, was also affected with convulsions for three days before his death, and expired in a comatose state four months

after he was taken under treatment. The other fatal case was that of a marine, in California, and spoken of in my remarks on that country, as having previously had dysentery in Mexico during a campaign in that country, and who suffered a relapse from having been treated for scurvy.

Numerous cases of ordinary cholera occurred in various ships, particularly in the tropics, from indulgence in fresh provisions, after living exclusively on salt for a long period. Occasionally cases occurred from eating fish, as the Gibraltar mackerel, which I noticed in my observations on the Mediterranean. These fish are very abundant in the above port, are easily caught with the hook, and are so tempting in appearance as well as flavor, that seamen eat them without regard to consequences. Hence, on board the United States, a whole mess were poisoned by them, having been seized with violent colic, headache, fevers, flushed face, nausea, and other marks of gastro enteritic disorder. In the J. Adams similar cases were previously caused in the same manner. In the treatment of all, the best plan was to induce emesis, if it did not already exist, by a dose of ipecac. and tart. emet., and having emptied the stomach to administer a cathartic, with some laudanum and essence of mint, or other medicines, to relieve tormina. A like practice was adopted in cases of cholera induced by improper digestion, checked perspiration and bile. But Asiatic cholera required a greater diversity of remedies, as shown in an essay written on that disease as it happened in 1831, on board the latter vessel, and published the next year in a number of the

American Journal of Medical Sciences, by its learned editor Dr. Isaac Hays. Some cases began with high excitement, a full strong pulse, hot skin, severe pains darting through the face, head and body, and spasms, both of the alimentary canal and long muscles. In these cases blood letting was employed successfully. But those which come on insidiously, as most did, with a mere watery diarrhœa, unattended with pain, did not allow of bleeding, and required the immediate use of narcotics and stimulants, internal and external, with the use of magnesia and super carb. of soda, to correct nausea and acidity. Powders of calomel and opium in the preparation of one to three grains, the sweet spirits of nitre, sulphuric ether, laudanum, and essence of peppermint, taken as anodynes and antispasmodics, and opiate enemata used for similar reasons. The hot bath of sea water with pulv. capsicum in it, frictions with flannel, volatile liniment, syrup of capsicum, sinapisms and blisters were applied to the surface. When these had drawn, powdered sulphate of quinia was sprinkled on the skin. In cases where there was much prostration, the stomach irritable, and the blisters had been applied to the epigastrium, hot brandy toddy and the volatile julep, made of carb. ammon., gum arabic, sugar and water, were given as internal and diffusible stimulants. Bottles of hot water and hot stones were applied to the hands and feet, and after the patients were taken out of the bath, they were rubbed dry and wrapped in blankets. At first, for want of a bathing tub, the feet were only bathed in hot water, but the change for the general bath was not followed by better effects,

for it was thought to exhaust the patients and hasten death.

To produce instantaneous vesication and reaction, powdered cantharides were first boiled in spirits of turpentine, and then applied, and during convalescence, when there was much prostration the stools were colorless, from being deprived of bile, pills of blue mass and opium proved highly advantageous. As the latter was sometimes too sedative in its action, the superacetate of lead was substituted; but though its action was different, it was not thought as beneficial as the opium.

To restore strength, besides the quinine, an infusion of columbo was prescribed, and another was made of that root, powdered cinchona, and ginger was still oftener used from its superiority. During the progress of the disease the patients chiefly used rice and barley water for drink and nourishment, and after it subsided great care was observed in their regimen to obviate a relapse, which sometimes occurred from improper food. A watch, too, was set on the whole crew, to ascertain who had the premonitory diarrhœa, the men having it were forthwith put on the sick list and treated for it, and so far as was possible the common rations were stopped, and the crew fed on fresh mutton and rice instead of pork and beans. The sick were separated from the well by being kept on the berth deck, while the latter were retained on the spar deck, and caused to sleep under tented awnings. This kind of quarantine was continued until the ship arrived at Vourla, at the western end of the gulf of Smyrna, the ruins of a vast arched reservoir of rough stone,

resting on five rows of square hewn columns, had been found on English Island, or Great Dourlak, which lies opposite the ancient city of Clazomene. Each row consisted of twenty of them, about 15 feet apart, and extended 300 feet, from east to west. Laterally the columns were of the same distance apart, so that in round numbers the reservoir, when perfect, was a hundred yards long and thirty-three broad. Its average depth or height was 15 or 20 feet, but the accumulation of dust and rubbish did not permit of an accurate calculation in this respect. The reservoir also had a number of round air-holes of several feet diameter in its top, had fallen down on its southern side towards the foot of the declivity on which it stands, thereby admitting plenty of heat and light, was quite dry at the bottom, and proved exceedingly well adapted for a temporary hospital in warm weather. By slinging the cots and hammocks of the sick to small spars brought from the ship, they were rendered very comfortable as respects their beds. After other things required for the sick had been sent on shore, my excellent assistant, Dr. Euclid Borland, now a wealthy planter of Louisiana, and myself, spent the day together in attending them, and dividing the night into two watches, relieved one another from our arduous duties. By strict attention to both old and recent cases, all soon displayed the benefit, their number was diminished, and the disease was checked. Only five more died after the ship reached the island, making altogether eleven, out of sixty-nine cases, including twenty-six affected with nausea, griping and incipient diarrhoea. No case happened after the

9th of September, or the 18th day subsequent to the occurrence of the first one. Upon the 15th of the above month, the number of the sick had been so much reduced, their condition was so improved, and they as well as the hale were so freely supplied with ardent spirits, smuggled into the hospital from some boats belonging to the adjacent country, that Capt. Voorhees, the commander, ordered the former to be abandoned, the ship to be watered at Vourla, and two days afterwards sailed for Minorca, via Milo, where she was detained a week to be caulked. At neither place pratique was allowed her, although we had the strongest evidences of the non-contagiousness of cholera. At the last named island, therefore, she held no communication, and at the former she did not do so until forty-eight days had been spent at the Lazaretto, in what was termed purification.

Obstinate constipation and enteritis were occasionally encountered, but oftenest among seamen who had just left port and were novices at sea. But habitual costiveness is a common affection for those of all ages for some time after getting to sea, especially when it is rough, the wind high, the motion of the vessel great, and the functions of the brain and nerves are disturbed by constant reeling and agitation, inducing vertigo and sea-sickness. During this there is want of appetite, nausea and vomiting; the peristaltic motion of the intestines is suspended, from the reverse action of the stomach, their emptiness and want of distension, as well as the hardness and dryness of the fæces. To overcome this costiveness, then, the best method was to remove the causes first

mentioned; but this could not be done unless the sea became smooth, the wind died away, or the vessels went into port. Hence medicinal agents became necessary, and certain prophylactics were adopted. Gentle cathartics and elysters—mostly the former—as castor oil, seidlitz powders and other saline articles, were prescribed; sometimes I gave magnesia, to correct acidity, as well as to purge, and creasote, worked up with gum arabic and sugar, then dissolved in water and given in the proportion of one drop to a tablespoonful. This remedy was the most effectual used by me for quieting the stomach, but sometimes opiates were requisite to relieve excessive spasm and pain in the stomach, attending emesis. Before this was effected, it was useless to administer laxatives by the mouth, and the bowels had to be unloaded by elysters. To assist in the removal of costiveness, the regimen of the patients was changed to suit their conditions; and molasses and dried apples, after being stewed, were mingled with the vegetable portions of the rations, as bread and rice. But to permanently remove sea-sickness and torpidness of the bowels, the most certain plan was for the patients to keep on deck, walk about and perform their duties as well as they were able, thereby to divert their thoughts from themselves, and irritation from the internal organs to the external and the extremities. If vertigo and nausea obliged them to lie down, they did so no longer than necessary, and ate when they could. By thus struggling against nature, I found that the seasick were eventually relieved, but that in those who gave themselves up to it, languished

below deck, and eat nothing, it continued indefinitely, and would recur during a whole cruise, whenever the weather was boisterous at sea. The above remark is most applicable to officers, not required to keep on deck or watch, and, from their rank, have it most in their power to indulge their inclinations. Hence, pursers, chaplains, marines, officers and doctors suffer most, and for the same reasons passengers are so afflicted with the same complaint. It is, however, not confined to the sedentary or idlers, as persons not keeping watch are termed on board ship. During stormy weather I have known some of the most active and experienced watch officers to suffer, and among them a lieutenant, who after having suffered from seasickness in one of the frigates named, and being relieved by the creasote mixture, was transferred to a schooner, suffered so much, that at last his spine became affected, he partially lost the use of his legs, and was condemned as an invalid. His increased suffering, from having changed vessels, was attributed to the much smaller size of the latter one, and the peculiar motion caused by the difference in the form of her sails, as well as her being so much more easily and violently affected by the waves. With the difference between the motion of a large and small ship, I was never so much struck as when in the Macedonian, off Pernambuco. Though not the least affected by her action, I was made deadly sick by that of a Brazilian brig of war, cruising off there for Buenos-ayrean privateers, and on board of which myself and a boat's crew were taken a part of the distance between the city and the frigate, which would not an-

chor in consequence of the height of the sea and the danger of her being driven upon the reef of rocks separating the harbor from the Atlantic. Notwithstanding the fine English cheese, and brown stout, and French brandy, recommended as a sovereign cure for sea-sickness by the gallant commander, Capt. Mansing, we were unrelieved, and most happy to leave his hospitable ship and get back to our own.

Of the injurious effects produced on the spine by the movements of a vessel at sea I witnessed another instance, in the same frigate to which the above lieutenant belonged. The patient was a senior of the same grade, had seen much active service, and been partly crippled in the lower extremities on a former cruise. He was, nevertheless, able to move about, thought himself capable of performing the duties of executive officer, but the frigate had not got beyond the gulf stream before he was incapable of continuing on duty, and came on my sick list, on which he continued until our arrival at Gibraltar, and he was sent home with a sick ticket. He reached it in safety, but has been an invalid ever since.

A third uncommon instance of the effects of a vessel's action, was that of an officer who was regularly incapacitated for duty when it was great, and invariably had with sea-sickness a severe orchitis on one side, which very much swelled the testicle. The affection, however, was originally owing to a gonorrhoea, and what made it more singular was, that it should revive after nausea and vomiting, though these are so effectual in removing the disease, when they are induced by medicines. In his case the most ef-

fectual remedy was a plaster of iodine ointment to cover the whole part, which it violently inflamed externally and denuded of its cuticle in almost an entire state.

The cases of enteritis unconnected with other diseases were inconsiderable in numbers. They were principally owing to costiveness and indigestion, and were fatal in only two persons, the one named, who had it induced by tinct. of colchicum, and the other that of a medical officer belonging to our squadron in the Mediterranean. He was taken sick after a long fatiguing walk at Smyrna, thought his liver was affected, prescribed for himself, and took a large dose of calomel and epsom salts. What he afterwards prescribed is unknown, but he grew worse and became delirious by the time the ship reached Port Mahon, a month subsequently to being taken unwell. His assistant there was then called in to attend him by his messmates. Dr. Hernandez, the quarantine physician consulted with him, and I did the same after my arrival. Guided by the description given of the case, and unable to see the patient from his being in quarantine, I supposed his liver was really inflamed. But after the quarantine expired, he was carried on shore to a hotel, where he was inspected by me. He was found on a sofa, delirious, restless, nervous and agitated. His eyelids were widely expanded; his countenance was pallid and sunken; he sighed deeply; his skin was warm, the pulse weak, and 110 per minute; the tongue parched, brown in the centre, scarlet about the edge, and white between it and the centre. He was thirsty and drank

with eagerness. The abdominal muscles were tense, their integuments flabby and easily grasped; and when I pressed upon them with my fingers, he cried out and expressed great agony. It was likewise stated that he had had several yellowish fetid stools daily. From the above opinion we concluded the liver, though it may have been inflamed, was not so at that time, and that he had gastro-enteritis. Accordingly twelve leeches were put upon the abdomen, and also six cups were applied. An anodyne enema and a neutral mixture, made of vinegar and super carb. of soda, with one-eighth of tartar emetic to a teaspoonful, were given, and his body was sponged with hot water. The next day his pulse was more feeble, jactitation greater, the tongue darker, and his countenance more haggard; he was more delirious, called for persons absent, and was much distressed when he tried to swallow the medicine. This was stopped; one-eighth of tartar emetic alone given, to be alternated every hour with wine whey, and he was sponged with hot brandy. At night he had a profuse clammy sweat; his pulse was fluttering; he uttered the most agonizing groans, threw his arms in every direction, grasped at the air, and the next day, after discharging his urine and fæces involuntarily, drew his last breath.

Autopsia.—After a long argument concerning its propriety, I persuaded the friends of the deceased to consent to an examination, and made one in the presence of the other medical attendants. The stomach was shown to be contracted and inflamed at different

parts near the pyloric orifice, and to have its mucous coat softened in others. The intestines were inflamed throughout and changed in structure; their glands were indistinct in some portions, enlarged in others, and the condition of the inner coats could be ascertained by the appearance of the external. On the left side of the abdomen the peritoneum adhered to the intestines and was inflamed. But the colon was the chief seat of inflammation, and of a dark red color, resembling mahogany. The mucous coat of the bladder, at its fundus, was also inflamed, but the kidneys, spleen, pancreas and liver, exhibited no marks of disease whatever. We have, then, in the account of the above case, a wholesome lesson given of the great impropriety of self-treatment, even by a well-informed physician, and likewise of that of any others undertaking to prescribe for a patient without contact, and even distant inspection. For as the above one was in quarantine, he was not allowed to be personally examined by either the quarantine physician or myself; and as he had not been prescribed for by his assistant until unable to describe his feelings, the latter had to judge of what ailed him by the medicines he had taken from his own prescription. In this manner he was misled in the prognosis, as the patient had been, who having had, so far as we could learn, his liver excited by heat and excessive exercise at Smyrna; had enteritis, caused by the profuse discharge of bile into the intestines; and this, too, probably having tinged his skin and urine, he presumed his liver was not merely functionally deranged

—took a large dose of calomel for its cure, and induced a still larger secretion and ejection of bile into the already inflamed intestines. More bilious symptoms having been thus produced, he was more deluded, and continued his malpractice.

CHAPTER X.

Enteritis as connected with Ship or Typhoid Fever; Cases of this on board the Brandywine and Delaware; Treatment of them and other Febrile affections encountered in various ships of war and in different climates.

On board the Brandywine and Delaware a number of similar cases to the above occurred, but were connected with typhoid fever. In the former ship this happened in the winter, at New York, and after leaving there, as before stated. In the latter vessel they happened while she was anchored in the Chesapeake bay, off Annapolis, and five miles from the western shore, between it and Kent island. They began to occur soon after I joined the ship to relieve my worthy predecessor, Fleet-Surgeon James Cornick, and just after the two last cases of measles I had found convalescent on board, had been discharged from the list. Those of typhoid fever were attended with coma, prostration of strength, a frequent, feeble pulse, red and parched tongue, sordes upon the teeth, profuse sweats, cough, soreness, tension of the abdomen, a sallow complexion, nervous tremors, and, in the fatal cases, with involuntary discharges of urine and fæces. Two of the patients died while I was on leave of absence from the vessel, and one a few days after my return. One lived thirteen days after taken under treatment, another eighteen days, and the third for three weeks. All the cases may be properly as-

cribed in part to the crowded condition of the crew, especially at night, when the ports were closed; ventilation was imperfect, and the men had to confine themselves to their hammocks on the two gun-decks. But the great tendency of the disease to the bowels was probably owing to improper regimen and impure water.

Treatment.—From the difference in the cases, that had to be varied: when the bowels were not much affected, or costive, Epsom salts, the spirits mindereri, magnesia usta and castor oil, with laudanum, were taken. But these remedies, save the last, were seldom admissible, and the most energetic of an opposite kind had to be used, to restrain the bowels, as pills of ipecac. and opium, enemata of this and laudanum, and the sulphate of morphine by mouth. When debility came on, the latter medicine also had to be united with quinine, in pill and mixture, and the infusion of gentian and columbo prescribed, to prevent their purging. The carbonate of ammonia, wine, and brandy toddy, were given in the worst cases, but without evident benefit. Leeches, cups, frictions with turpentine and vol. liniment, blisters and a flannel roller were applied to the abdomen. The body was frequently sponged, the mouth cleansed with vinegar and water; rice-water, arrow-root, &c., were allowed for drink and diet.

After this fever disappeared in the Delaware, her men suffered very little from any other kind during her cruise, either on the Brazil station or in the Mediterranean, in which she remained from April, 1843, to February, 1844. From August 12th of the

former year, while she was at Spezzia, until her arrival at Norfolk in March of the latter, not a single case of fever was recorded—a most uncommon exemption in so large a crew. The care taken of their health and comfort, her cleanliness, good ventilation, keeping much at sea and in healthy ports, were the chief causes of it. Altogether the number of cases of typhoid, remittent, intermittent and continued fevers amounted to only thirty-three; but in the United States and John Adams the proportion of cases was greater, and in the last particularly, from her crew, in 1833, having been much exposed to malaria during a four months' cruise in the Archipelago and adjacent parts. The cases which then happened were entirely miasmatic, undoubtedly caused by the length of time she spent in the Gulf of Smyrna and port of Milo, where she laid for three weeks uninterruptedly.

Reference to these cases and those in the first-named ship has been made in my topography of the Mediterranean, and few special remarks will be made of them now, or of other cases of the kind in other vessels, as they are not peculiar to seamen, and chiefly originated on land, or from exposure to malaria, wafted from it to the vessels. But it may be useful to remark concerning the treatment adopted for these diseases, that the following proved the most successful. When there was high excitement, the pulse full, strong and frequent, blood was taken from the arm until the former was reduced; the bowels were evacuated with salts, sometimes with calomel and jalap, or blue mass, magnesia, rhubarb, scidlitz

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John Williams, another seaman of the same ship, was admitted the day after the above one, that is Sept. 4th, 1833, with the same affection, which became remittent, and it may be said, likewise, continued fever, such was its violence. He was a man of fine dimensions for a sailor, active, athletic and ingenious, as shown by some pieces of antique marble he picked up near Athens, cut and polished handsomely, and presented me while he was well. But John had a sailor's habit of drinking, pushed it to an extreme, and had been sent out of the flag ship for using liquor he could not prove was his own. Unfortunately he also was one of a number of boatsmen employed on the 2d of the month in preventing the vessel from getting ashore at Castle Sandjack, which commands the narrows, 10 miles below Smyrna, and in its gulf. In kedging the ship off the shoal he got completely wet, and was taken sick on the night of the 3d. When he reported himself sick the next morning he was sallow, as usual, had headache, languor, general pains in the joints, a cold, dry skin, loss of appetite, a furred tongue and frequent pulse. He took, at three doses, 20 minutes apart, an ounce of Epsom salts and a grain of tartar emetic in ℥viij. of water; used hot rice water for drink, and bathed his feet in hot water at night. The next day he complained of universal pains, had a paroxysm of fever before the previous one had subsided, and acute pain in the region of the kidneys, which continued unabated the day after, when an imperfect intermission occurred. On the 6th the fever came on without being preceded by the cold stage, and terminated the next day in a

profuse sweat, but his skin became of an orange hue, and upon a dose or two of sulph. of quinine having been given him, in place of the acetat. of ammon. and tart. emet. he had been taking, severe vomiting happened, to restrain which he took tr. opii ʒss., and had a blister put over the epigastrium. The night afterwards he slept soundly, but was a little delirious; and the next morning, as he could not take the quinine internally, three grains of it were sprinkled twice a day upon the blistered surface. On the 10th his whole body was jaundiced and of a saffron hue, he had slight fever, with quite a natural pulse, his urine was high colored, he was restless and thirsty, the discharge from the blister tinged his shirt of a greenish yellow color, and by noon he had considerable fever without chilliness. He was prescribed three blue pills and a nitrous powder of the common proportions, each containing 5 grs. of nitre, one of calomel, and an eighth of a gr. of tart. emet., and given every seven hours. This treatment was continued two days, when another trial was made with the quinine internally, which resulted again in vomiting. He next took a semicupium of sea water and eat some sago. Sept. 13th his pulse was full and soft, his skin still saffron colored, his urine like French brandy, he complained of more pain in the kidneys, extending up the spine, and was cupped along it. The tongue was dry, the lips were cracked, the abdomen was tense and painful, his mouth had been sore for two days, and the nitrous powders were stopped. On the 14th sordes collected on the teeth, he had four or five bilious stools, complained much of pain in the

spine and right side, but of less in the belly; the pulse was 78, soft and compressible, and in the evening he became more prostrated. Cups were put over the seats of pain, frictions with vol. lint. applied afterwards, the epigastrium was dressed with basilicon ointment, a gill of Madeira wine was given in half a pint of sago, for diet, and he was prescribed an infusion of pulv. cinch. $\mathfrak{z}\text{i.}$, pulv. gentian $\mathfrak{z}\text{ij.}$, wine $\mathfrak{z}\text{viii.}$ and boiling water lb. iss., in two ounce doses. The following day symptoms were worse, he suffered much pain, his respiration was impeded, deglutition was difficult, his mouth filled with sordes, dark, thin, dissolved blood oozed from the fissures in his lips, his pulse was small, feeble, frequent and compressible, his urine very dark and foetid and of a greenish hue, and he had hiccough. Attempts were made by frictions to legs, adding a gill of brandy to the tonic infusion and the application of spirits of turpentine to the blistered surface, to sustain and restore him, but he died just before midnight. An autopsy was held the day after, and the appearances were the following: The cardiac end of the stomach was inflamed internally, the lower part of the intestines had suffered in like manner, but slightly, the liver was enlarged, tough, indurated, and of an ash color anteriorly. The acini were entirely obliterated, save about the great hepatic vessels, the gall bladder was filled by two or three ounces of very dark bile, like lampblack, mingled with mucilage, the spleen was twice its natural size and very soft, and tore easily, the kidneys were enlarged, pallid and tough, and had their tubuli urimi-

feræ obliterated, in appearance at least, and the bladder was completely contracted.

Such were the morbid changes in poor Williams, produced by fever superadded to the evil effects of strong drinks, which, had they have not been taken, he might have overcome the disease and been still living, but, as is generally found in seamen, organic changes had happened before he was taken sick, and he was incurable.

Nine more cases of miasmatic fever of less severity were treated in the same month with the preceding; none ended fatally, and all were cured speedily by first evacuating the body in a similar manner and then using the quinine internally or externally, and sometimes in both methods. On board the United States, 74 cases of fever of almost every description, besides catarrhal, took place during the period of her being put in and out of commission. Of that number more than two-thirds occurred within the first eight months, and by the time she returned to Minorca from a cruise to the Ionian Isles, Greece, Syria and Egypt. She afterwards had some cases from time to time, until her return to cruise in the Levant and sojourn for a few days at Smyrna. Of the former cases of fever the only one which was fatal was that of a seaman likewise named Williams, who was taken sick some days after the ship left the Bay of Suda in Candia, with the squadron, bound for Beirut, where he died on the seventh day after being taken under treatment, of a violent bilious remittent fever involving the right lung, which without doubt had suffered previously from pleurisy. His symptoms resem-

bled those of his namesake, but differed from them in his stomach not being inflamed, his skin being of a dark brown hue instead of saffron, and in his having much cough with acute pain in the right hypochondrium and right side of the thorax. Inflammation having been higher in him, he was bled freely twice, had leeches and cups applied to the side affected, was blistered, took epsom salts and tartar emetic, this alone and with the spiritus mendereri, the nitrous powder and brown mixture. The quinine mixture was also prescribed during the remissions, but little opportunity was afforded to give it; he was bathed, took laudanum with other medicines for sleep, but on the last day was ungovernable, tore off his blisters, refused to take medicines, and died in a comatose state. He was examined in the evening, his right lung was discovered to be perfectly hepatized, and the pleura costalis and pulmonalis adhered throughout. The adhesions were evidently of long standing, and owing to former disease, and the lung adhered so firmly to the diaphragm as to be inseparable by the greatest force. The left lung was sound, but had its pleura filled with water in the interstices between it and the ribs; the liver was much enlarged, gorged with dark grumous blood, and softened at its right extremity; the mucous membrane of the duodenum was much thickened and inflamed, the ileum was similarly deranged, the gall bladder was distended with black, slimy, tenacious bile, the stomach presented no marks of inflammation, but its mucous coat was white and glossy from having lost its villous cha-

racter, ascribable to his habits as a sailor, and serving still further to prove how hard it is to find an old one who is not prone to disease, and to become a victim to it from excessive potations or the long continued use of alcoholic beverages.

CHAPTER XI.

Hepatitis; Remarkable Cases and means of Cure; one conjoined with Pulmonic Disease, produced by flogging. Splenitis. Nephritis. Cystitis. Stricture of the Urethra and Deaths occasioned by it, with Autopsia. Diabetes and Hydrocele; Operation for the cure of the latter.

The hepatic affection in the preceding case may have been principally owing to the fever, and of recent existence; but from the morbid condition of the stomach we can hardly think it was entirely so, and must believe that at least a predisposition to hepatitis had been caused by intemperance. In the case of fever mentioned before his, this could not be doubted, and in the treatment of the diseases just spoken of, and others of seamen, we must generally expect to find the liver injured in a similar manner. Hence it was that in two vessels alone, nineteen of their men were treated for hepatitis, and a number for disordered liver, without including cases connected with other diseases. Of the former only one patient died, a young man in the Delaware, while on the Brazil station. His liver was very much enlarged, projected at the pit of the stomach, caused great induration of the parts, and probably suppurated; but he requested his messmates not to allow the doctors to examine him, and we were not able to do so and prove the fact. In the Macedonian a like case occurred in her passage there, and ended likewise in death; but after ulceration of the adjoining portions of the liver and stomach had taken place, and the abscess had discharged itself

into it, from which it was rejected by vomiting, kept up for several days without the use of emetics.

Of the general treatment of hepatitis, whether symptomatic or idiopathic, it will be scarcely necessary for me to remark more than that the antiphlogistic was first used, blood generally and locally was abstracted, the patients were purged with mercurials, singly or combined, and when action was reduced they were given in alterative doses. Afterwards some of the laxations so often named were given to carry them off and prevent salivation, which I avoid, if possible, in this and all other complaints. As a substitute for mercurials, the extract of taraxicum was given in pills, several times daily, or was dissolved in water with the tr. of rhubarb and subcarbonate of soda, and given every other morning. Each dose contained ʒss. of the extract and soda, and ʒij. of the tincture. This mixture has the triple action of an antacid, cathartic and chologogue, may be employed usefully in smaller doses, and is well suited both for the bilious and dyspeptic.

With regard to the treatment of individual cases I will observe, that it was modified to suit symptoms, and in the case of the young man mentioned it varied much, from its being complicated, attended with great uneasiness, symptoms of enteritis, besides being connected with fever which was variable, sometimes continued, at others intermittent, as long as he lived. This was for eight weeks after he first reported himself sick, and in that period he took the sulphate of magnesia with tartar emetic, calomel in large and small doses, the blue pill, often magnesia and rhubarb,

the nitrous powders, spiritus mindereri, and tartar emetic, cream tart. and water, quinine mixture, pills of quinine, blue mass and sulphate of morphine, the acetate of opium, a bitter infusion and volatile julep. He was also cupped, poulticed and blistered, but venesection was not practised upon him, from the depressed state of his pulse and his system at large.

I will here add, that among these cases was that of a sailor who had hepatitis conjoined with pulmonic disorder, and ascribed his ill-health to having received fifty lashes with the cat-o'-nine tails the fall before, and after having been confined to the brig, or ship's prison, for five months previously. He remained on the sick list from the 7th of March, 1842, until the 1st of June, was then invalided and sent home, making the second person whose disease I ascribed to flogging; but the first one died of consumption some months after it was inflicted, and did not live long enough to die in his own country and amid the consolation of his friends. An end, however, has been put by Congress to that vile practice, which degraded the man and brutalized the officer; and medical men in the service are no longer called upon to stand by, witness the cruel punishment, and say how far it can be inflicted without death being occasioned or life jeopardized. This was a difficult matter to decide; much depended on the constitution of the men. Some were fleshy, lethargic, and comparatively insensible, and would bear the lash without cries or flinching. Others were thin and sensitive, and suffered inconceivably, until they became insensible by contusion of parts or falling into

a state of syncope. A man of this description I saw receive 100 lashes, the last of 300 inflicted by sentence of a court-martial for manslaughter. The sight was in the highest degree revolting to my feelings; but from his having fallen into the above condition, it seemed to me it was an act of mercy to have him receive his whole punishment at once, rather than for him to revive and on another day, when his senses were restored, to have to bear the remainder. He, therefore, received on board my own ship the last third of the 300 lashes, the two first thirds of which had been inflicted on board two other vessels of the squadron. After the punishment was over he came under my care, had several soothing applications made to his body, in a few days was healed of his wounds, and served in the Savannah during her late cruise, until condemned as an invalid and sent home.

The spleen I have rarely known to be affected in seamen, and when it was it was more probably the result of miasmatic fevers than idiopathic. For the cure of it, when arising from the former, of course the best mode was to cure the complaints which caused it, and at the same time to give such remedies as were best calculated to act on the spleen. Among them I have used most effectually pills of calomel and colocyath, containing from one to three grains of these articles, and given in such number as to produce copious catharsis. The same pills were employed with great utility in a very bad case of splenitis treated in one of the frigates. So far as could be ascertained by close external examination, the organ projected six inches below the ribs; but the patient denied that

he had had intermittent fever, though he acknowledged he had been a hard drinker. Besides great tumefaction in the left side, he had a pallid complexion, a soft, smooth skin, pain upon pressure, a furred tongue, a small, weak and frequent pulse, and costiveness of the bowels. After he had been repeatedly purged with the above pills, each containing three grs. of both medicines, he took some of blue mass, and the next morning the taraxicum mixture mentioned. He was kept on a farinaceous diet, cupped over the spleen, wore a seton for some time in the same part, and was cured within two months.

Nephritis, cystitis and stricture of the urethra were much more frequently met with than the foregoing complaint. This I ascribe to intemperance having so much greater morbid influence on the urinary organs than on the spleen. Though ardent spirits may not positively give origin to stricture, yet when this becomes inflamed from gonorrhœa, or injured by violence to the perineum, they certainly make the inflammation worse. They also dispose to that of the prostrate gland, which, becoming enlarged, is well known to obstruct the urethra by the projection of its middle lobe into the latter. At an early period of my professional career, I saw a man so badly affected in this manner, that before he could be relieved by the introduction of a catheter, cystitis occurred, his urine became putrid, and he lost his life. Trask, a seaman, who suffered for a long time in the Macedonian from stricture of the ordinary kind, at last had disease of one of his ureters and other urinary organs produced, and died at the Naval Hospital, Philadel-

phia, some time after his admission. Such changes had been produced that the diseased parts were preserved as a curiosity. Not long afterwards, Franks, a soldier of the war of 1812, who had served in the glorious campaign in Canada during 1814, and subsequently became a marine, reported himself as having gravel. From his description of his disorder, he was prescribed for at the marine barracks as being thus affected. On my visit to them the next day he was so much worse that he was taken out to the hospital, examined with the necessary instruments, and found to have so close a stricture that no urine whatever could flow through. Ulceration had formed behind it, and the urine had become infiltrated into the perineum, scrotum, and inner parts of the thighs. Sloughing was the consequence, and all the skin and cellular substance, penetrated by the urine, became one enormous ulcer, leaving the testicles bare, and resulting in death a few days subsequently. A third case of stricture connected with both nephritis and cystitis, was treated by me ten years afterwards in the Naval Asylum. The sufferer was a pensioner, Edward Coffee, an old sailor, of florid complexion and slender form, who made a rule never to return from liberty without being tipsy, as plainly exhibited by his stupor and staggering gait. He kept up this wretched mode of existence for nearly 18 months, excepting some intervals when on the sick list. He first had epiphora of both eyes, then ulcers on both shins, and next stricture, of which he was relieved. But in less than a month he was for the fourth time taken in charge, and had the last complaint combined with

cystitis, nephritis and general prostration. Laxatives, antacids, cream tart. and flaxseed tea, balsam mixture, quinine, bitters, blue mass and anodynes were given him. He was cupped over the loins, used hot bathing to the perineum and an injection into the bladder of sup. acet. of lead ℥ij. to flaxseed tea one quart, with some benefit. But his constitution was entirely broken, and he died about six months from the date of his last admission.

Autopsia.—The stomach was contracted, its mucous coat softened, easily removed, tinged with blood, except at the pyloric orifice, which was scirrhus; the liver was enlarged, engorged, very dark, and so rotten at the back part that it tore when slightly pulled; a number of small empty sacs, lined with a white membrane, were interspersed in various parts, and the gall bladder was filled with bile. The spleen was larger, the pancreas smaller than natural; the left kidney was inflamed and changed in structure, the right one at least twice its natural size, entirely altered in composition, and formed into an abscess filled with pus, extending to the spine, and which was burst on my attempting to extract the kidneys. Its ureter was also enlarged greatly and filled with pus, several ounces of which, mingled with urine, were found in the bladder. The mucous coat of this was inflamed chronically, all the other coats were thickened, and the stricture of the urethra would not allow the passage of a catheter without being first divided with a scalpel.

With respect to cystitis, I will add that a severe case of it happened in the Savannah. It was at-

tended with micturition, the passage of white, turbid urine mingled with pus of a purulent kind, and as the man had a sore throat at the time, was attributed to cold taken during the month of October, 1849, and damp weather while she was lying in the bay of St. Francisco. But in other respects he was a healthy man, and was cured within seven weeks by purging with pills of calomel, jalap and aloes and castor oil, by giving him daily from x. to xx. gtts. of the oil of cubebs, a quart of slippery elm tea, with some cream of tartar and a grain of sulph. of morphine in it for drink; by his using a hot hip bath twice a day, and having a solution of sulph. of zinc, grs. i. to iii. in ℥viii. of tepid water, injected once or twice a day into the bladder. This was done by means of a catheter passed into it and having a gum elastic cloth bag attached to its outer extremity, and containing the solution, which was impelled forwards with my hands by squeezing the bag after its mouth had been securely tied. But after the injection had been several times used it caused swelling of the left testis, which was cured by the use of the evaporating lotion.

During my last cruise a most uncommon number of seamen of the Savannah were affected with diabetes. Six were taken under treatment within a month, a greater number than I have ever known to be affected during any other cruise. The first case happened while we were doubling Cape Horn, the others afterwards. They were thought to be chiefly owing to a catarrhal affection of the urinary organs; but I was convinced some of them were aggravated, if not produced, by the inhalation of the spirits of turpentine

used in painting the ship, at the same time they were under treatment. There was no observable disorder in the digestive system, as in diabetis mellitus, and the remedies used for the cure of the disease were principally prescribed to act on the kidneys and bladder. They were directed an infusion of buchu leaves, cubebs, balsam copaiva in mixture, poultices, cups, and plasters over the hypogastrium, hot semicupia, and injections of flaxseed tea and sup. acet. of lead, castor and croton oil as purgatives, and the muriated tincture of iron, as a tonic and astringent, were likewise used.

Hydrocele.—Though this complaint is only indirectly connected with those of the urinary organs, I will here make some remarks about it, as in no other part they can be more appropriately introduced. It is not a disease common to all mariners, but they are frequently affected by it in warm latitudes. A number of cases of it there have come under my care. The first one happened on the coast of Africa, when the John Adams was on her way from Liberia. The usual signs of hydrocele having been detected, an operation was determined; but we had no trocar on board, none could be had, and a cure was easily effected by making an incision with a bistoury through the scrotum and tunica vaginalis testis, discharging the water accumulated, removing a large hydatid from between the former, then applying to the wound a compress of lint wet with lead water, keeping it upon the part for several days, and then substituting the evaporating lotion to remove swelling. The patient in the interim was kept in a cot and upon his back, observed

regimen and took four doses of castor oil at intervals. Encouraged by the success in this case I have ever since pursued the same method, with modifications to suit the patients. In the Delaware it was entirely successful on all who would permit the operation. One seaman refused, although strongly advised to have this done, suffered very much from the great size to which the sac distended, and was sent home as an invalid. Some water re-accumulated in the first case operated upon in that ship, but after it had been a second time discharged it did not collect again. To prevent this from happening, since that time, I first open the sac, discharge the water, and excise a portion of the former. By these means I cured two other patients in the Delaware, though one of them had the disease in each sac and had previously had one of them injected. This had served only to greatly increase the thickness, and is certainly not a suitable operation when hydatids exist; as I have seen in almost every case of hydrocele treated by myself.

CHAPTER XII.

Scurvy; its causes; Improper regimen; Cold, Dampness, and dependence sometimes on Atmospheric Phenomena, with the forms of treatment found most effectual for its cure.

The next of the diseases of seamen of which we will speak is scurvy. Though not confined to them, and frequently seen among soldiers and other landmen, from some peculiarity of place and regimen, it certainly is much oftener met with among seamen, from their being so much exposed to its causes. The most potent of these is well known to be long continued sustenance on salt provisions; but the constant exposure to a cool, damp atmosphere, confinement in close, foul apartments when both air and light are insufficient, the wearing of too light clothing, depression of spirits, which is apt to occur when a crew is in a vessel long at anchor in a dull place, and the want of exercise enough to keep up excitement in the general and capillary circulation, are undoubtedly sufficient of themselves to produce some of the most striking symptoms. These are, the pallid, livid countenance, swollen limbs, petechiæ, pains in the joints, and blotches resembling the ecchymosis caused by contusion. In this manner I account for the almost entire exemption from scurvy in the six vessels in which I served, and of others in the squadron to which they belonged, while in warm climates; and there were no causes to excite scurvy save those dependant on improper regimen. The contrary was

observed when these vessels were in cool and damp places, especially in the river La Plata and the bay of St. Francisco, where even in summer it is damp, foggy and chilly. In the former, the south-east wind blows a great deal, wafts the vapors of the ocean as far as they reach, and produces a predisposition to the complaint; and were it not for the general abundance of fresh provisions to be had on its shores, it would not merely induce a scorbutic diathesis, as shown in scratches and other trifling injuries [producing extensive and dangerous inflammations and sloughings, as happened in the Delaware, after her crew had been enjoying an exemption from all scorbutic complaints, between the tropics and upon the coast of Brazil. Those above mentioned occurred, though the men were regularly supplied two or three times weekly with fresh beef and vegetables; and we must also ascribe to the climate of the La Plata, in a considerable measure, the great mortality from scurvy in the squadron of Lord Anson while there. In the Macedonian, too, a most remarkable case of mortification I attribute to the development of the scorbutic diathesis in a young healthy sailor, while she was lying off Montevideo, and equally well supplied with fresh provisions. At first he only complained of great prostration, and was prescribed a tonic infusion. Two or more days afterwards he was still weaker, and complained of pain in the right buttock, which was a little swelled. Frictions with a stimulating liniment were made; the swelling increased, a number of vesicles filled with bloody serum appeared near the hip, the whole thigh became swelled, perfect gangrene

ensued, and he died by midnight, though all necessary remedies were given to support him. By 9 o'clock the next morning his whole body had so decomposed that his feet could scarcely be secured together by the usual strings tied about them; immediate burial in the river had to be made, and decomposed blood issued from his mouth and nostrils so copiously as to flow out of the hammock in which he was sewed up, while he was borne up a ladder to the spar deck. Such was the amount of gas formed in his corpse that, although two cannon balls were lashed at his feet, it was seen a few days after burial floating by the ship upright, and breast high above the water.

In California I saw more of scurvy than in all other parts put together, and it was there that I became so well convinced of the important influence of these causes in the development of scurvy, both on board ship and on shore, from the great exposure of the miners in pursuing their occupation during damp weather, and also dry, when they were obliged to spend many days a leg deep in water while washing out gold; to live in miserable tents, sleep upon the ground, eat as bad fare and use as much salt meat as sailors at sea. But those on board of our ships of war were made more prone to scurvy by constant confinement to them, except when on boat duty, from the strong disposition they had to desert and seek their fortune in the mines. To render it more difficult for them to effect this, the squadron was kept anchored at the watering place off Saucelita, five miles from St. Francisco, two or three from the

mouth of the bay and to the left of it, where the anchorage is overhung by mountains on one side and the island of Los Angeles on the other, and the fogs of the Pacific are driven in by the westerly wind during the whole summer. It was there that the crew of the Ohio became so affected with scurvy that she had to go twice to Honolulu to get rid of it—once before the Savannah relieved her, and again after the latter had transferred to her a part of her crew and the former was about to depart for home. At the same place the disease broke out in the Savannah and Southampton shortly after the Ohio departed. The captain of a revenue cutter, there for some weeks, also consulted me about some spots on his skin, which were unaccountable to him, but on examination proved to be scorbutic blotches, though he had recently arrived from the Sandwich islands, had obtained an abundance of fruit, vegetables and fresh meat, and assured me he had not been living lately upon salt. Some of the officers of our ship had similar blotches, but their fare had not been so good. On the contrary, it was chiefly on ship's stores, and their supply of vegetable food was exceedingly scanty. No fruit was to be had for most of the time, and we never had even an ordinary supply. My own mess was so badly off for fresh meat that they even fed upon the meagre bodies of sea gulls shot upon the bay. At last Com. Jones, the Commander of the squadron, became so well convinced of the insalubrity of Saucelita, or any other of the western parts of the bay, that he made the ships rendezvous at Benicia, twenty-five miles from the mouth of it, and where the wind was much more mod-

rate, the fogs were much thinner and the air not so chilly. The crews were likewise supplied there with an abundance of fresh beef, some sweet and white potatoes and pumpkins, and got rid of the disease. Of this there were three kinds; one was attended with very sore gums, the second with petechial blotches, either livid or jaundiced, and the third had a complication of the two others. The last was the perfectly formed disease, and the best specimen was exhibited in a seaman who had been long in the habit of eating his pork salt and rare. His legs had been swelled four weeks before he was treated, were somewhat oedematous, pitted on pressure, and were affected with dark red spots, pain and stiffness. His complexion was pale and livid, his gums were sore and bleeding, his tongue clean, pale and moist, his appetite good, pulse small, weak and frequent. In cases of this kind it is that the gums are more affected, the teeth are decayed, lose their enamel and fall out. One of the worst cases of dental injury from scurvy I witnessed in an old English sailor, who got it while in the Colombian navy, from being long fed on salt provisions. The whole of his teeth seemed to be stripped of enamel, were dark and unnaturally large. In the Savannah, the patient who had the sore mouth had no blotches, and the scurvy seemed to expend all its force on the gums. These sprung up into large fungous swellings, covering the teeth, and had to be often lanced and washed with a solution of sulph. of copper and the sulph. of zinc. Cases where the teeth as well as gums suffer most, seem to originate chiefly from eating salt provisions, which during digestion

and assimilation disengage a large quantity of chlorine. This is probably circulated throughout the body, and decomposes the phosphate and carbonate of lime, forming the teeth and bones. Hence it is that they are rendered carious, and we find disunion occurring in fractured bones which have been perfectly united. The specks and blotches are owing to the general debility of the system, and the torpor produced in the skin by that, the cold and dampness to which it is subject, the want of exercise causing less carbon to be eliminated from it and the lungs, and the small amount of oxygen taken up by them from the inhalation of impure air, and respiration not being performed vigorously, as happens during the excitement induced by exercise of the body. From want, too, of vegetable food, particularly of that which is acid and charged with oxygen, a proper supply of this is not received in assimilation. Hence, the blood itself becomes imperfect and still more darkened, and both the general and capillary circulation being weakened, the blood moves sluggishly, œdema occurs, ecchymoses are formed, and the integuments are infiltrated either with the serous portion of the blood or its entire globules, which the capillary veins are unable to return to the large branches.

In the treatment, therefore, of scurvy, I found it was not merely necessary to change the diet of the sick from salt meats to vegetables and fruits, but then, to restore health, all the causes mentioned must be removed; the patients were to have pure, warm, dry air, comfortable clothes and beds, to take as much exercise as their crippled legs would bear, to use

frictions with sulphur ointment, volatile and soap liniment, warm foot baths, poultices and the evaporating lotion, to cure œdema, swellings, specks and blotches, and relieve the acute pains which were suffered. Some patients had to take anodynes to procure ease and rest, and for debility and cutaneous affections took the decoction of sarsaparilla, the extracts of cinchona and gentian, the infusion of quassia, the quinine mixture and muriated tinc. of iron in solution. But though the iron in this preparation acts well as a tonic, the latter is objectionable from the chlorine in it being so injurious to the teeth.

As far as possible patients of each kind were fed on the best vegetables to be had, of which potatoes and wild water cresses were preferred. For drinks, lemonade made of citric acid in its crystallized state, apple and tamarind water, were allowed in as large quantity as desired by the patients. By the above course of treatment all were cured but the one already spoken of as having died of dysentery, induced by being treated for scurvy. A similar union of this disease and dysentery occurred in a division of U. S. dragoons, under Col. Casey, some time before, during an expedition into the country; and he informed me that these cases were the most difficult to cure, and generally terminated fatally.

CHAPTER XIII.

Diseases of the Nervous System, inclusive of the Brain. Apoplexy. Cerebritis. Paralysis. Tumor of the Brain and Post-mortem appearances. Treatment of the above Diseases, and of Convulsions and Delirium Tremens.

Seamen, from their active, hardy mode of living, are not often affected with any of them, save those of a neuralgic character and connected with rheumatism, unattended with fever or inflammation. The latter kind are very common, and we often meet with some cases of the *doloroux*, *sciatia*, *hemeralopia*, *nyctalopia*, *amaurosis*, *palsy*, *apoplexy*, and frequently with *delirium tremens*, as may be inferred from their indulgence in drinking. *Epilepsy* is occasionally met with among seamen, but is very much confined to the younger class; for persons liable to that disease are not apt to go to sea, and if by accident or imposition they get into a ship, they are usually got rid of whenever an opportunity occurs.

The most of these complaints were not numerous enough, and are too well known for me to speak at large concerning them. They were all treated agreeably to the most approved methods of the profession, with modifications adapted to the peculiarity of the cases. Among these were a number of *palsy*, either partial or general, from injuries to nerves, the spinal marrow and brain. An uncommon example of this disease happened to a sailor who had just come on the sick list for *catarrh*, and was given some of the

remedies mentioned. But a few days before his admission he had been frolicking at Port Mahon. The first symptoms of palsy occurred the evening of the day he was admitted, and consisted in a numbness of the right leg with inability to move it perfectly. Frictions were directed at first, but the next day, still complaining of pain in the left side of the forehead, he was bled and given a hot pediluvium. No improvement was caused, the pain continued, the right side and leg became perfectly palsied, two leeches were applied to the temples, four purgative pills were prescribed, and frictions made with vol. liniment on the lower part of the spine. The day after, his mind was deranged, and more leeches were applied to the temples, ℥xvi of blood were taken from the arm, a ℥ss . of Epsom salts was given and the bath continued. The medicine operated actively, but his bladder became palsied, no urine could be passed by him, and between two or three pints of it were drawn off with a catheter. His right arm was affected and his mouth drawn to the left side. Four more pills were taken and 12 leeches applied to the lower part of the spine; still he got worse; the day after was apoplectic, had stertorous breathing, lost the use of the right arm, could not speak, frothed at the mouth, and his tongue inclined to the right side, though the mouth was inclined to the left. The pupils dilated and contracted when a light approached and receded from them; the pulse was full and 78 in the minute. He was bled ℥xxx ., leeches *pro re nata* on the temples, cupped and blistered on the nape of the neck, and had his feet bathed in hot water. This was also kept in bottles applied to

them. A sinapism was put on the inner side of each thigh, and $\bar{3}$ v. of blood were drawn from the left temporal artery. Immediately afterwards he became more sensible, his countenance was lively, the right arm strongly contracted, the fingers clenched, and he attempted to open them with those of the left hand; but the pulse became frequent and small, he soon sank into a state of insensibility and died during the night. On dissection, the following morning, the upper half of the cranium was removed; the bones were found preternaturally thick, the meningeal veins were turgid with blood, and the whole brain was unnaturally dry. The left hemisphere of it, including the anterior, posterior and middle lobes, was very soft and like lard, yielded to the slightest pressure when cut, even lost the sharp edges made, and appeared to have an excess of medullary matter. The right hemisphere was naturally hard and comparatively healthy, and no morbid changes were detected in the cerebellum.

Three cases of apoplexy under my care ended fatally, two in the Naval Asylum, from intoxication, and one in the Delaware, from a surfeit. There was no autopsy in the last case, but both of the former were examined. The first case was under treatment for eight days. He was fully under the influence of liquor when he was seized with the complaint, fell in his room just after returning from a visit to the city, and had his senses partly restored by the loss of $\bar{3}$ xl. of blood, cups to the temples, blisters, sinapisms, the use of a purgative enema and cathartics. His stomach was likewise disordered, he had much hiccough, and

for relief from it took tr. of opii and lavender, milk and lime water. For a long period he had been blind in the right eye, from opacity of the cornea, and suffered from headache, consequent to a cold taken at sea. This is stated in order to account for peculiarities met with on dissection. On opening the cranium the dura mater on the right side adhered with inseparable firmness to it, so that it seemed attached as closely as the pericranium and was very much thickened, the right optic nerve was shrivelled and smaller than the left, two or more ounces of clotted blood were found in the right hemisphere, and extended from the anterior to the posterior lobe. A quantity of serum was confined to the sinus, the hemisphere was softened, and the pia mater was engorged with blood.

In the several cases similar appearances were found. A rupture of blood vessels had happened in the right hemisphere, its lateral sinuses were filled with blood, and the left with serum tinged of a reddish hue; the anterior lobes of the cerebrum and the cerebellum were softened. In both the cases the place of lesion in the brain had been indicated by the patients having had palsy of the left side of the body. None of the cases of delirium tremens terminated in death, and this may be ascribed chiefly to the men not having it in their power to stay long enough on shore to carry the stimulation of the brain to such a height as to materially or completely interfere with its functions. I found in a majority of persons that some of the tincture of opium, administered in moderate doses, putting the patients into a bath tub and pouring cold river or sea water, by the bucket full,

over them, were sufficient to calm as well as sober them. In obstinate cases and those attended with convulsions, an emetic was given, first, to disgorge the stomach of liquor, or the tartarized antimony was administered in nauseating doses to relieve spasm, at the same time that the cold water was kept running in a constant stream from a cup held as high as possible above the head. By this method I rarely failed to quiet the patient in a half hour, or hour at most. For simple drunkenness it was an infallible cure, and I always recommend it in place of the old fashion of allowing the inebriate to disturb a crew a whole night, or forcing an iron bolt between their teeth, tying it with a rope yarn behind the neck, and either breaking them or causing strangulation. For the cure of epileptic and other convulsions among sailors, cold water is also well adapted, and if a bath tub be not at hand or convenient, I have the patients stripped, laid upon deck, and then drenched in the above manner. Also for drunkards and persons feigning epilepsy it is a sovereign remedy, and I have frequently made the former, although insensible at first, implore me not to drown them, before the bathing was done. The rationale of the curative effect of the water is, that it abstracts a vast amount of caloric from the body and head, causes a diminution of the circulation and makes the cerebral vessels contract, expel most of the blood in them, resist the introduction of more and remain in a state of torpor.

Of cerebritis two fatal cases took place in the Delaware within a month of each other. One was that of a midshipman, who got wet with rain in one of the tops,

and was seized with catarrh and diarrhoea before his brain was affected. Of these complaints he was relieved by the brown mixture, ipecac. and opium pills, hot pediluvia, elm tea and black drops. His bowels then became costive, he had severe headache, which required the use of cups and blisters to the nape of the neck, blood-letting and purging with Rochelle salts and tartar emetic, blue mass, and cream tartar and barley water. No relief was obtained, he became delirious, continued so several days, was seized with spasms of the lower jaw, clenching of the teeth, rigidity of the arms and back, had involuntary evacuations and coma, and in spite of the above and other remedies, died within a week from his being taken unwell. But his death was partly owing, it was thought, to the motion of the ship, which was at sea, causing his head to be injuriously affected, and reviving the pain in it to which he was subject.

The second case was that of a sailor who was taken with acute pain in the spinal column; took 45 gtts. of laudanum, had cups applied to the nape of neck, and was given some purgative pills. He was not relieved, and the next day had convulsions, stiffness of the neck, clenching of the jaws, darkness of complexion, profuse sweating, stertor and dilated pupils. For these symptoms he was bled ℥xvi. , leeches on the temples, cupped and blistered on the neck, took a solution of tartar emetic and two clysters, used frictions of pulv. cantharides and turpentine, and was prescribed a dose of ol. ricini and the last named medicine. Bottles of hot water were kept at his feet, and towels wet with cold water were put to the head. No

abatement of the disease was obtained, and he died the day after his admission on the list. He had a brother on board who objected to a post-mortem examination, and none could be made.

But the most rare specimen of diseased brain met with by me, was at the Naval Hospital of this city, then standing behind one of the wings of the Asylum. The patient was Joseph Young, a seaman, said to have been taken unwell while going to the Pacific around Cape Horn, and in the frigate *Guerriere*. He suffered so long and so much from intense headache—caused, it seemed, by taking cold—that he was sent home and to the hospital. When admitted he complained of acute pains in the head, eyes and face, numbness of the latter with nervous twitches; he was both deaf and blind, and the pupils were motionless. These symptoms continued with little variation until the fall of 1828, when the headache lessened and finally left him, but his strength failed him, he became emaciated, was seized with diarrhœa and involuntary emission of both fæces and urine. The previous history of the treatment he had undergone was unknown, but I found, on record, that after he had entered the hospital he had been treated in a variety of ways, and received every medicine thought suitable to his case. Among the medicines were opium, valerian, extract of belladonna and assafoetida, and some purgatives. He had likewise been bled and cupped about the head. Nothing was of any service; he remained, for two weeks after I was attached to the hospital, a most abject specimen of humanity, perfectly blind, deaf and incapable of mo-

tion, constantly having involuntary discharges, and then expired. At the request of surgeon Thomas Harris I held an autopsy, and here give the results: Upon removing the upper half of the cranium the dura mater near the superior longitudinal sinus was found thickened and had its veins tinged with blood; those of the pia mater were more so, and very much enlarged; the ventricles were much expanded, being capable of holding six ounces of serum, but contained not over two, and the plexus choroides was of enormously large dimensions. The under surface of the left middle lobe was tinged of a saffron hue, and had beneath it a reddish white, fungous tumor, which entirely occupied the middle fossa, rested posteriorly on the petrous portion of the temporal bone, covered the meatus auditorius internus, compressed the portio dura and mollis nerve, extended to the anterior clypeoid process, and rested upon the posterior one and sella turcica. The optic nerve and internal carotid artery were compressed, and the foramina, ovale spinale and rotunda were hid from view. The tumor adhered to the dura mater only when it covered the anterior part of the petrous portion, had no perceptible blood vessels, was separated from the temporal bone by the dura mater, was intimately blended with the pia mater and tunica arachnoides and connected with the crus cerebri and cerebelli. The shape of the tumor was oval, but exteriorly it was divided into a number of lobules, like those of a young cauliflower. The greater part of the tumor was of firm consistence and hard to cut, except in the part covering the foramina of the sphenoid bone. This part

was soft and formed of granules, like the seed of a fig or the roc of a fish. On comparing the eyes, the left was found to be larger, more prominent, and of a lighter blue color than the right. This increased size of the former was probably owing to pressure of the tumor upon its blood vessels, causing tumefaction. The contents of the abdomen were inspected; no morbid changes were observed, save in the greatly diminished size of the viscera. The small intestines were merely about the third of their natural dimensions; the mucous coat was so thin as hardly to be distinguished, the ilium scarcely admitted within its calibre the tip of a little finger, and the whole aspect of the viscera was that which we might expect in a person who had died of inanition.

CHAPTER XIV.

Injuries of Seamen. Contusions and Contused Wounds; their large proportion. Gunshot Wounds. Remarkable Cases of that of Head, and Deaths from Falls. Injuries of the Neck, Head, Ribs and back. Wounds of Lungs from Fractured Ribs, with fatal results. Complicated Injury of Arm, &c.

By much the most numerous of these are contusions, which embrace every description of lesion caused by them. The greatest number of contusions were received by falls or blows inflicted in fighting on board, or during liberty on shore, where sailors often settle their quarrels instead of doing so in their ships, because of fear of punishment for violating regulations. On shore, too, they frequently come in collision with other seamen, civil and military authority, and are severely bruised with hands, missiles and the butt end of muskets. Falls from aloft, either of themselves or of blocks, marlin spikes and spars, contuse them seriously; or they slip down a ladder, walk down hatches where one has been fixed, but has recently been removed to be scrubbed and dried, and lose their lives, or are very much injured. In men-of-war it is a custom to take away ladders from between decks when they are to be cleaned, and persons habituated to go down the former without thought are very apt to fall down the hatches. These are so numerous in large ships and so directly over one another, that when a person falls through them he is not only apt

to be contused, but to break his neck or back and suffer from fracture of some of his limbs. Falls from aloft are followed by still greater injuries of the kind, and in large, high-masted vessels are almost certain to be followed by death when the falls occur upon deck. But from the many ropes intervening between it and the spars, sailors, in falling, occasionally save themselves from great injury by presence of mind and catching hold the ropes, or by striking them and having their falls broken. On board the Delaware four boys, while reefing, fell at the same time from the mizzen top-sail yard, a distance of not less than 60 feet, and by catching hold of objects, striking them, or having something about their persons to protect them, escaped without fatal injury. One of them had his fall broken by a jack-knife tied by a rope yarn about his neck having been swung around a rope. In the Macedonian, Thos. Bowden, a sailor, fell from the main cap, 60 or 70 feet above the spar deck, struck the main-stay, and falling upon some boards over the hatch beneath, suffered violent contusions and concussion of the brain, bled from nose and ears, and was thought to have been killed; respiration having been suspended and his face pallid and sunken as if death had occurred, but he revived in a few minutes, and after some days was on duty again.

To show what a large proportion of injuries are from contusions, I will state that, out of 256 of the former, received by the crews of two vessels, 189 of them were from the latter, embracing two of the boys above mentioned as having fallen without being killed, who were seriously hurt; one received a contusion of

the occiput and left thigh, the other a variety of similar injuries, a contused wound of the left ear, and suffered concussion of the brain with symptoms of compression. The lower jaw was also much injured, but was not perceptibly fractured, and his mouth was cut and bled profusely. The pupils were widely dilated, but the right one was most so and the left alternately dilated and contracted. After reaction occurred he had 3xx. of blood taken from the arm, took several doses of Epsom salts and an enema of molasses and water. A solution of tartar emetic in sugar and water was likewise given, cold water was applied constantly to his head, hot to feet, his temples were leeches, and barley water given acidulated with cream of tartar. Under this and like treatment he recovered and was restored to duty within twenty days. A like happy result did not follow a similar accident some months afterwards, to another young sailor. He was carelessly seated on the mizzen-top with his feet hanging through the lubber's hole, when he was struck upon the back by the flapping topsail, tumbled headlong to the foot of the mast, fractured his skull upon the deck, and luxated the atlas vertebra from the occiput. Perfect compression of the brain was caused, but I hoped, not being at first aware of these injuries, that he might be relieved by trephining, and was preparing to do so, when the whole crown of his cranium was found to be movable, and the instruments were laid aside, as attempts at resuscitation were useless, and respiration was hopelessly suspended. He rapidly sunk and expired within a few minutes after he was carried down to the sick bay

from the quarter deck, whereon he had fallen head foremost. A third seaman, of the same vessel, while making fast a block for a clothes line, fell backward down the fore shrouds, by the breaking of the cord attached to the block, rolled over the side of the ship, suffered a violent contusion of the face, and was killed by it, or drowned. As his body was not recovered for some days, it was uncertain which caused his death, though from his sinking forthwith and not rising to the surface of the water, it is probable that he was killed by the contusion received. A fourth sailor, after the vessel reached the Mediterranean, had his head crushed and was instantly killed, by the parting of the main topmast rope, by which it was being hoisted to its place. The mast came with such velocity that his head was caught between the large iron ring to which the shrouds are made fast at the head of the topmast and the main cap. The skull was completely crushed in at its right anterior part, and the brains gushed out through the wound and nostrils. A triangular incision was made into the soft parts over the fracture, and the depressed bone raised. It was much splintered, the left eye was forced out of its socket, and all medical or surgical aid was utterly fruitless. The service lost by this accident a valuable seaman, and it was thought by some malicious person having cut a strand or two of the mast rope, so as to cause it to break.

On board the United States three persons were killed by falls; one from the spar deck to the sand locker in the fore hold, the other from a ladder between the gun and spar deck to a chain locker in the

main hold, and the third from aloft. The first person, Thomas Hyland, a fine young seaman, had his neck luxated and broken at the second vertebra, but lived for some hours, came perfectly to his senses, and exculpated the man who struck him down the hatch, from malicious intention of killing him. This was done in my presence, and testified to by me at the court martial who tried the offender. Instead, therefore, of being hanged, he was punished with 300 lashes, as before stated. The second person killed was a remarkably handsome lad, who had been guilty of some misdemeanor, and was being carried to the gangway by a seaman who acted as guardian to him. To prevent him from carrying him up the ladder, the boy laid hold of an iron rod used as a bannister, unintentionally unhooked it, lost his hold, and falling backwards, caused the man also to lose his balance. Both fell down the main hatch together; both were injured in like manner. The boy struck the back of his head and neck against the side of the chain locker with such force, that blood gushed from nose, ears and mouth, and he expired in ten minutes. The man received a severe wound on the side of his head from striking the sides of the hatch, and bled in the same manner as his companion, but became sensible in fifteen minutes and vomited. Fourteen ounces of blood were taken from his arm and twelve leeches applied to the left temple. He was purged with Epsom salts and took a solution of tartar emetic, which caused him to throw up a quantity of bilious matter. The next day he was bled again, took the latter medicine and blue mass, and was again leeches on the temple

two days afterwards. For pain, restlessness and great grief at the death of the boy, he was given some denarcotized laudanum and sulphate of morphine. Subsequently he underwent different kinds of treatment for local and general pains, deafness of the left ear and palsy of the right side of the face ; was frequently leeches and blistered, took repeated foot-baths, had cold lead water applied to the head, was purged with blue mass and castor oil several times, and finally cured six weeks after he was injured. In the same vessel, John Guttrow, one of the most athletic sailors in her, met with a more terrible mishap. The men were ordered, at one o'clock in the day, to furl sail, while she was at anchor in Port Mahon. He ran aloft, and laid out on the starboard arm of the main yard ; the brace at the opposite end parted, the former swung backwards, he was thrown off, made several somersets, struck a spare topsail yard lashed to the main chains, and fell into the water. Some men plunged in after him, brought him to the companion way and carried him on board. Fortunately I had just returned from shore, and took him in charge. On stripping him I discovered that he had been bruised from the head to the legs, upon his right side. He had a wound on the back of the former and one on the left hip ; complained of pain, chiefly in the right arm, was pallid, livid, very anxious and cold, and had great difficulty of breathing, gasping constantly. His pulse was full and frequent, and in a short time crepitus and emphysematous swelling were observed at the root of the neck. The swelling rapidly spread, covered the whole chest and abdomen, and

extended to the thighs. Some bloody serum oozed from the wound on the left hip, and was thought to come from a wound in his lungs. At the end of three hours he breathed his last, and after a proper elapse of time he was examined. A large bruise, without lesion of the skin, was found on that covering the right scapular. This was unbroken, but from the right side of the thorax being plainly most injured, it was suspected that the lungs had been hurt beneath the above bone; and on cutting beneath it, the fourth, fifth and sixth ribs were found to have been fractured unequally, near the spine, had been forced through the pleura, and the inner fragments had made a wound three inches long into the left lung. The fragment of the sixth rib was three or four inches long, and had pierced it like a knife, profuse hæmorrhage had partly filled the right pleura, and the left contained some bloody serum. The stomach was distended with gas to a great size, and was so much enlarged at the cardiac extremity as to raise up the diaphragm over it, and cause it to encroach much on the left cavity of the pleura.

A contusion like that just described befel a seaman of the Delaware, but in a different manner. He was engaged with a large part of the ship's company in heaving up an anchor, by means of the capstans, and imprudently got so near the end of one of the bars, in that of the main deck, that, as the capstans turned, he was jammed with such violence between the bars of one and a wooden stanchion, that the fifth rib of the left side was fractured at its middle and forced into the lung. Profuse internal hæmorrhage ensued, about

zxl. of blood were expectorated during the day, he was rendered very weak, became cold, and suffered from dyspnœa. During the succeeding night he raised zvi. more blood. The left ulna was likewise broken two and a half inches from its lower end, and the right shoulder was much contused. The hæmoptysis continued for some days, gradually diminished, and was changed to a foetid purulent expectoration. Fever also attacked him, inflammation of the lung ensued, V. S. had to be practised, notwithstanding the loss of blood caused by the wound, and upon the fourth day zxxiv. were drawn. This became cupped and sizzled a half hour afterwards. The other treatment consisted of tartar emetic in solution, cream tartar in rice water, a dose of castor oil, a pectoral of gum acac., tartar emetic and sulph. of morphine, *aa.*, gr. $\frac{1}{8}$ to water zss. , next the brown mixture and hot pediluvia. A roller was passed around the thorax and supported by means of suspenders crossed upon the shoulders, and splints were applied with bandages to the forearm. He was kept in a state of perfect rest in a cot, and on a farinaceous diet. The treatment was varied to suit emergencies, and was much the same as that of pleuro-pneumonia. The expectorants were given as freely as he could bear, his bowels were opened with Rochelle salts and purgative pills, some of blue mass and of calomel and acetat. of morphine were taken, he had elm tea, also black for drink; tartar emetic ointment was rubbed upon the chest, but he rapidly wasted away, lost his strength, sweated profusely, was comatose and had a cough. His sputa from bloody became brownish, then gray-

ish and purulent ; his breath was offensive, his pulse frequent, and on the 11th day a cavity was detected in the left lung with a stethoscope. When he became prostrated the pectorals had to be stopped and the quinine mixture substituted, but at last, upon the 14th day after the injury he was seized with a severe fit of coughing, a profuse hæmorrhage again took place from the lung, and he died within five minutes. I was unable to examine him after death, and regretted it particularly, as it was important to determine whether the broken rib still continued in any manner to irritate the lung, as was probable. Of this fact I am so well convinced, that it seems to me it would be advisable, in a similar case, not to trust to a mere bandage and compresses for retaining the fragments of the rib together and in place, but to cut down, take away any spicula found, and then to adopt means for retaining the other fragments in their natural position. Several months after the occurrence of the first of the two last accidents related, one of almost as serious a kind befel a seaman in the frigate just named, while she was at sea. The crew were reefing topsails, when he fell from the cap of the main mast through the lubber's hole, struck the ropes, termed the main sheets, glanced from them, struck the hammock cloths and fell upon a coil of rope on the spar deck. His right leg and shoulder were contused, the left scapula was broken and driven in towards the ribs, the cuticle on both sides of his back was scraped off, the radius of the right forearm was luxated upwards and forwards upon the external condyle of the os humerus, the ulna was fractured three inches below

the olecranon, the fragments were forced inwards towards the radius, and he was insensible for a short time after falling. When his senses returned he complained of much pain, and was given some wine and laudanum. The radius was then restored to its place, the ulna adjusted, pads, splints and rollers were applied, the arm placed on pillows and the broken scapula dressed; ʒxx. of blood were drawn after reaction, and a solution of tartar emetic was given to prevent inflammatory action. Nevertheless this came on, much swelling ensued, it was impossible after a time to ascertain the true position of the bones, and notwithstanding all available remedies were employed, some deformity took place, though not sufficient to disqualify him from service during a subsequent cruise in another ship of war, to which he belonged when we last met, and several years after he was injured.

It may be useful to remark of him that not only the great violence inflicted upon the contused parts, but the fracture of the ulna being combined with the luxation of the radius, must be assigned as the true causes of the deformity which ensued. The splints were not able alone to prevent the head of the latter from slipping off the end of the humerus, as the ulna afforded no support, and having been broken, no longer acted the part of a splint. For the above reasons it appears to me, that in the treatment of a similar injury it would be advisable to employ extension and counter extension from the hand to the axilla, as in the cure of fractures of the lower extremity, by using them between the foot and groin.

But other things than ropes, on board ships, some-

times save life. I knew another sailor who fell from the mizzen top of the John Adams, struck upon the brass railing on the front of the poop cabin, afterwards upon the binnacle, and then tumble, without being killed, to the quarter deck. But a concussion of brain was caused; he did not speak until the day after the accident, and struck the left side of his head with such violence against the railing that the ear was broken into three parts and almost separated from the head. After reaction had been restored by frictions and sinapisms, ʒxlvi. of blood were drawn from the arm at two bleedings, cold applications were made to the head, the parts of the ear were closely brought into apposition with adhesive plaster, two purgative enemata and a cathartic were prescribed, he took the quinine mixture subsequently for debility, and within two months he was left off the sick list. But he could only do light duty, from the right arm and leg having been rendered partially paralyzed.

A warrant officer of the Pacific squadron had his right ear shattered in a similar manner, but from a loaded pistol which he fired while laboring under delirium tremens. The external ear was completely rent out, the concha being severed from the temporal bone, and the organ was only held by a slip of skin behind the ramus of the lower jaw. So hopeless was the restoration of the parts, that it was about being severed from the head when I got on board; I objected to it, introduced some stitches of the interrupted suture, applied some adhesive strips, brought the edges of the wound together, as in the above case, and then applied a compress and bandage over the

ear, and afterwards treated him constitutionally. As soon as union had occurred sufficiently, the stitches were taken out to stop the suppuration excited, and prevent the loss of adhesions. This treatment was successful, and he was cured with the loss of only the tip of ear, which had been blown away.

Other cases of gun-shot wounds, partaking both of a contused and lacerated kind, have fallen under my care from time to time, and directly or indirectly after their occurrence. Some occurred by accident, others from design. Of the former were two of officers engaged in hunting. The first imprudently, in leaping over a fence, placed the muzzle of the gun upon his foot, and blew away the soft parts between the great toe and the next one. By rest, poulticing the wound until the edges sloughed, and applying a solution of the sulph. of zinc, after the nitrate of silver, it was healed in two months without lameness being continued.

The other officer was injured last December, and did not come under my care until this summer. He was hunting in Florida, and was riding a wild horse which would not permit him to mount with his gun in hand. He therefore leaned the gun against a tree, mounted, seized the gun by the muzzle with his left hand, and in the act of lifting the former, pulled the trigger against the bark. Explosion occurred, and a whole load of buckshot was discharged into the anterior part of the forearm with awful effects. The flexor muscles were partly blown off, the ulna was shattered and a portion of the internal condyle broken off. A ghastly wound was left, but by the skilful treatment

of Surgeons Hulse and Tyrrel, it was healed, and when he came to me he had nearly recovered the use of the limb, complained only of inability to use the forearm and fingers perfectly, and of annoyance from two shot left beneath the skin near the elbow. These I abstracted by means of a scalpel and forceps, but one was so deeply imbedded between the olecranon and condyle, was so flattened, ragged around the edges, and held so firmly by a tough investing membrane, that it caused considerable pain and difficulty before it could be extracted. He, however, declined the use of either chloroform or sulphuric ether as an anæsthetic, and bore the pain with great fortitude.

At this time I have under care, for contusions received from a fall down the steps of the barracks, another person, a marine, Bernard Byrns, whom I mention, not on account of them, but an indentation in the upper part of the forehead, caused by a rifle ball fired at him while he was in the English army, and attacking Plattsburg, under Sir George Prevost, during the late war with England. Byrns states that he was with several comrades at the window of a ball room, when he saw an American in his shirt sleeves take direct aim, some hundred yards distant, and fire his rifle. The ball struck him senseless for 15 minutes; he says, that when he recovered and was feeling around for his musket, a comrade handed him the bullet. This, he stated, he had drawn out of the wound, and that when he pulled it from the bone it came together with a snap. From this account, and the scar left, it is probable that the ball fractured the frontal bone, and thrust itself between

the two parietal ones, at the anterior end of the coronal suture. The wound kept him four months on the sick list, many fragments of bone came away, and a deficiency of it two inches round was left. He was advised to wear a silver plate in it, but he refused, as he heard of other soldiers made crazy by doing so. He has suffered no injury in consequence of not taking the advice given, although he afterwards went with the army to New Orleans, fought at Waterloo, and has been seventeen years in our marine corps. All that now remains of the wound is an oblong, circular depression, which holds exactly a half fluid drachm when he holds his head backwards and makes his forehead horizontal.

A number of other gun-shot wounds might be recited as having been seen by me, but a small number happened on board ship and in our naval service, as our country has been at war with no naval power since my entrance into the former. By far the majority occurred on land, and the first of these was caused by the explosion of a revolutionary field piece, while firing a salute in celebration of a victory of the late war. The soldier who applied the match had his right arm so badly fractured as to be rendered unfit for service, from a false joint being formed. Another soldier was instantaneously killed by a scale of the cannon penetrating his heart, but so small that the wound in the skin over it was hardly perceptible. Most luckily a shower of rain caused the dispersion of a crowd of boys and adults just before the accident, and no other persons were hurt, although the fragments flew for a 100 yards around. One cut a

rail in twain, and the butt was cast down the hill and buried itself near the foot. Such were the effects of an overcharge of powder and wadding of wet, green grass.

At Rio, in June, 1828, I saw many gun-shot wounds, after the suppression of the revolt of the German and Irish troops, who had been incited to it by want of good food and pay, and finally by a severe flogging given one of the former on post, who had failed to salute a Brazilian major riding by him. All these wounds were made by musket balls, but many of them were discharged from field pieces brought up at the close of the action, and after the rebels had retreated to the gate opening into the barracks, on the western side of the great square of St. Auna, or Acclamation. Two ox carts, laden with stone, were fixed as barricades in front of the gate ; but the native troops, horse and foot, removed and charged behind them, shooting and bayonetting all in their way. The commander of the country dragoons charged through the gate, killed two men as he entered, but was not followed by his men, and was slain by two musket balls shot through his body as he wheeled in the court and attempted to ride out of it. As soon as he fell to the ground an Irish woman ran up and tore off his epaulettes, and he was carried into a corner of the hospital, where he expired. I saw many of the wounded after a siege of two days, and the rebels had been made to submit by threats of extermination, want of sustenance and ammunition, the cartridges in the magazine having been spoiled by an old German captain throwing a bucket of water upon them. Neither

he nor any of the other commissioned officers had engaged in the mutiny, and to this circumstance I was indebted for having been permitted to see the wounded, as the former were allowed to wear arms and go at large, met me at the gate and invited me to enter. Some bayonet wounds were seen, but there were many more gun-shot, which were chiefly through the feet and legs, from aim being taken at them that the rebels might rather be crippled than killed. Some were shot through one, others through both thighs; one had a ball to enter the sole of his foot, and perforate it from the heel to the toes; and another soldier wounded was a gigantic German, who had had his thorax perforated by several bullets and was expiring. In examining the wounds I was surprised to see with what simplicity they were treated. Those in the body had merely simple dressings, consisting chiefly of a clean muslin bandage passed around them, no medicine being taken, no medical officers were present, and a sergeant had charge of the hospital; but Dr. Dixon, a half-pay English surgeon of their navy, residing at Rio, was said to have prescribed for them. Besides these wounded I saw some of less importance walking about, and in a boat going to a prison ship, but as the minister of war had ordered all strangers to be killed, the wild Africans and natives, with knives and guns, put all the foreign soldiers to death found straggling through the city or about it, and the proportion of slain to wounded was much greater than usual. But we did not hear of either kind among the two battalions of French and English marines, who were sent from their squadrons in the har-

bor to assist in quelling the revolt. No one among them was probably injured during it, as the rebels submitted very soon after the former got ashore. Of our own no one was hurt, as they were kept on board and at their quarters during the night, when the English and French landed, and during all the time the revolt continued were not permitted to visit the scenes of contest.

CHAPTER XV.

Lacerated Wounds; Amputation of Foot in consequence of one; Tetanus from another caused by Luxated Radius. Incised and Punctured Wounds; Case of Anchylosis of Elbow-joint from one of the latter. Treatment adopted for the above Wounds.

Next to contused wounds, I have found lacerated the most terrible, if not the most common to which seamen are subject. Their hands and feet are most liable to suffer, from being caught in pulleys, termed blocks by them, and by the multitude of ropes employed in navigation. From the chain cables, too, which have of late years nearly superseded the hempen ones, dreadful injuries are received. The following was an example: On board the Macedonian while at Rio, an anchor was being weighed with a chain cable attached to it, when it broke loose from the fastenings* attached to it, and ran out with great violence into the water. John Piner, a negro, at work near the galley, had one foot entangled in one of the former, and was dragged forwards by the chain with so much force to the bows of the ship, that the foot was torn off at the ankle. The leg was also injured, and the surgeon was under the necessity of amputating the limb above the knee. The operation was the circular one, and proved successful, and in a few months the patient was enabled to walk by use of a wooden leg. Another accident of the same nature as the above,

* The stops and halser, termed messenger, which revolves around the capstan, and by means of the former heaves up the cable.



PLATE B.

1. Left foot partly torn off by a topsail brace.
2. View of this as it passed through its block or pulley
at the foot of the mizzen mast.
3. Muscles and tendons torn from the leg.



and likewise caused by a chain cable, I have heard of in another vessel, but do not know what was the result, with regard to the success of the amputation. A third instance of this accident was that inserted in Hays' Medical Journal, Nov., 1837. As many readers may not have met with the account, it may be well to again state the chief facts concerning the accident, and the treatment.

During the afternoon of July 9th, 1836, while the United States was beating against a strong levanter into the Straits of Gibraltar, John McMahon, a seaman, imprudently put his left foot into a coil of the main topsail brace. At that moment the yard was thrown forwards, the brace was drawn rapidly through the leading block, and he was dragged against it with so much violence, that his foot was torn off across the tarsus. The only parts left were the *os calcis*, *astragalus*, *cuboid*, *naviculare* and internal *cuneiform* bones, with some of the integuments and fragments of muscles. The *extensor longus pollicis* and *extensor communis digitorum pedis* were also torn out from their attachments in the leg, and when I first saw the sufferer he was in the arms of some of his shipmates carrying him below, while another supported the foot, which hung to the stump by some of the sinews. The sight was a ghastly one; the injured parts were as rugged as possible; little bleeding had occurred, from their being both lacerated and contused. He was taken down to the berth deck, given some laudanum and wine, and when reaction occurred was consulted about having the necessary operation performed. The injury to the limb was so great, the

occurrence of tetanus so certain, that I deemed it most prudent to take off the former above the knee, but as he was young and healthy, left it to him to determine whether he would take the risk of losing his life, or have the above operation performed, with the certainty of losing the use of the whole limb, save the stump of the thigh. He chose the former alternative, which was likewise preferable from his having a chance of preserving the use of the ankle and knee-joint. By the help of my two able assistants, Drs. Barrington and Elliott, I made an incision through the ragged soft parts, separated the astragalus and os calcis from the other bones of the tarsus not torn away, and removed these and projecting portions of tendons. All the arteries had retracted, and were with difficulty found, but were taken up and tied with silk ligatures. The first intimation we had of the presence of the anterior tibial, was a jet of blood from it when cut in making the circular incision. After a perfectly fair and simple stump had been made it was sponged, its outer and inner edges were brought together, and retained by adhesive strips. Over these were placed three compresses of lint and a bandage. Next the heel was laid in a quantity of tow, and a hollow splint padded with it was made fast to the ankle and calf of the leg by the application of another bandage. During the operation he took another dose of laudanum and some wine and water, but when put into his cot, still complaining of much pain, the stump was placed upon a pillow, and he was prescribed a grain of sulph. of morphine in an ounce of water, to be taken in the dose of ʒi. every half hour. After-

wards he became easy, fell asleep at 9 o'clock, remained quiet during the night, perspired freely in the morning, and had a full, soft and slow pulse, but complained of some pain. He was then given the following: Sal. Epsom ʒi. , tart. emet. gr. ij. , gum acac. ʒss. , tr. opii denarc. ʒij. , water ʒviij. Dose, ʒss. every hour. Drink, rice water and cream tart. The next day, after another comfortable night, his pulse became a little frequent, the stump somewhat foetid, Labarague's solution was applied to the dressing, and his bowels were freely opened by an injection of Epsom salts, molasses and water. On the 13th the dressing was taken off. The stump was found in a healthy state, but a little fungus had formed on the internal and anterior face of the astragalus and the centre of the stump. Its edges were an inch apart, but the skin forming them had commenced healing. The wound was not offensive, but near it were found some maggots. The parts were then cleansed, the lunar caustic put upon the fungus, a solution of acetate of lead to an excavation on one side, and the dressings were then re-applied. During this he had much pain and took 30 gtts. of laudanum. He took subsequently a solution of tart. emet. every two hours, and at night gr. i. of opium. His diet was tapioca and sugar, his drink as before mentioned. On the 15th, as he complained of pain in the leg, the dressings were again taken off, the stump cleansed with warm water of the slough created by the caustic. This was then re-applied, the stump re-dressed with strips, and a compress of lint spread with simple cerate, the solution of tart. emet. was continued, and the

bowels evacuated by a clyster. The above treatment was continued as required, all nervous and febrile symptoms were subdued, the blue pill was frequently given, and sometimes purged off with magnesia and rhubarb; the stomach was kept in order and the wound healed handsomely. By the 23d of August it was only about the size of a sixpence, and he was then sent home in the Potomac. After getting there he enjoyed a pension for many years, but the Commissioner of Pensions at Washington lately informed me that he died June 30th, 1849, of some complaint unknown to the former.

To show how differently injuries result, and how much depends upon attending circumstances, an account of the following one is added, although the sufferer was not in the naval service, and I was called upon to attend merely from my being nearer than any other surgeon when it was received. A boy of 15 years of age, living near the Naval Asylum, was standing upon the lower limb of a cherry tree, and shaken off of it by another boy. The former fell upon his hands against the ground with such force, that the lower end of the right radius was not only dislocated, but entirely ruptured its ligaments, tore through the soft parts anterior to the carpus, and lodged in the palm of the hand. When seen by me the bone was found firmly fixed in that position; extension and counter-extension and various other means were tried to reduce the bone to its proper place; but none succeeded, and at last I had to make the wound larger by cutting through the lips bound around the neck of the radius. This was then re-

duced without difficulty; the wound closed with adhesive strips, pads and splints applied as for fracture, and necessary constitutional treatment prescribed. For some days the patient seemed to thrive, but the weather was very hot, fever then came on, the forearm became very much inflamed and swelled, suppuration occurred, the splints had to be removed, a solution of sup. of lead, and poultices made up with it, to be applied. He was purged with Epsom salts, given a solution of tart. emet., some pills of blue mass and laudanum. But on the sixth day of the accident he had nervous twitches, and two days subsequently decided symptoms of tetanus; although having been warned of the danger by Prof. Gibson, with whom I had met, I had taken every suitable means to prevent such a result, and had given large doses of morphine. At the request of the father a consultation was to have been held with Dr. Hartshorne, and the hour was appointed, but before it arrived the boy, after having episthotonos, had spasms of the glottis, and died of suffocation, as shown when I reached him, by the scratches inflicted by himself on his throat in his futile efforts to get breath. The fatal result of this case I ascribe not as much to the severity of the injury as to the peculiarly sultry condition of the atmosphere during his illness, which was in July, 1841, to the uncommon delicacy of his constitution and defective structure of his osseous system, for he had had the right forearm broken several years previously, and the year before the last accident had fractured both bones of the left forearm by a fall from a stable trough. For the latter injury he was attended by

me, and cured without unusual difficulty, by means of pads, splints, bandages and a sling. But under the same circumstances attending a like instance of a compound luxation he suffered, it would be, in my opinion, the safest practice to amputate the forearm, to prevent a like fatal termination occurring from the supervention of tetanus. Of course, however, in such cases we must consult the wishes of the patient and of his friends, before we deprive him of a limb, and especially one so important as the right arm.

Many instances of incised and penetrating wounds came under my observation. They were mostly caused by accidents, few were intentional, and some of a doubtful kind, as the following: Two seaman of the *John Adams*, just after quarters, got into a fight, some say, but others state merely got into a play with cutlasses, which were cut and thrust. One of the men very soon struck his antagonist with the point of his weapon upon the left thigh, some inches above the inner condyle, and made a wound about two inches deep, and nearly as long upon the inside of the limb. A copious discharge of blood followed, and as it was thrown out by jets, it was certain that an artery had been wounded. It was thought to be the superior internal articular; a careful search was made for it, but it was so deeply situated that it could not be found, and I thought of taking up the femoral, as the man was becoming exhausted, but I resolved to first try compression. The flow of blood was checked by a tourniquet applied around the thigh, a conical piece of a bottle cork was laid upon the base of the inner lip of the wound, which formed some-

thing of a flap, a compress was then laid over the cork and both were held in place by a roller put around them and the limb. In this way the hæmorrhage was arrested, but so much pressure was used that the skin beneath the cork ulcerated, and so much blood had been infiltrated that the cellular membrane about the wound sloughed, and the blood came away in a decomposed state. The limb was likewise tumefied; he was seized with fever, which was cured with Epsom salts, used by the mouth and as an enema, and spiritus mindereri, combined with tartar emetic, in the usual proportion. The swelling was reduced by lead water, the wound healed by injections of the sulph. of copper, and the application of powdered cinchona and red oxide of mercury, and he returned to duty a little lame, fifty days after the receipt of the wound.

The other case of penetrating wound happened after this manner: Several boys of the Delaware were seated upon one of the gun decks, and amusing themselves with playing drafts, when another boy passing by struck a black one playing, and ran down a hatch. Just as he was descending the ladder, the former threw a closed jack-knife at him. The blade, from being held at the time, came open, struck him exactly between the head of the right radius and the external condyle of the humerus, and made a small wound into the joint, which was thought at first would be soon cured, but violent inflammation ensued, the whole limb became affected, the elbow and forearm soon became much swelled, and the most energetic treatment had to be adopted. The parts were leeches, covered with compresses wet with a solu-

tion of subacetate of lead in brandy and water, he took pills of calomel and colocynth, the spiritus mindereri and tart. emet., and the acetate of morphine gr. $\frac{1}{8}$ every hour, to relieve pain. As counter-irritants, a blister was put upon the forearm and another upon the left arm. Subsequently he took blue mass and Epsom salts, was cupped, had the swelling scarified, the wound cauterized with the lunar caustic and used the black wash. Notwithstanding the use of all these remedies, suppuration and fungus occurred in the wound and about the elbow joint, the parts had to be poulticed and lanced, he became debilitated, and a bitter infusion and syrup of sarsaparilla had to be given. At the expiration of almost two months the wound was healed, after frequent applications of the caustic and powdered cinchona to the fungus, which sprouted forth from the former; but partial ankylosis of the elbow joint was left, and he never, while in the ship, recovered the perfect use of the limb. About the same time he was injured, several of his shipmates had their hands wounded by the spines of catfish, which abounded in the La Plata, and when caught with a hook and line, dashed themselves about with such force that several men had two fingers transfixed at the same time by a single spine. As remedies for these wounds, the lunar caustic and poultices applied to them were found to be the most effectual. If the wounds were neglected they were apt to fester, and to cause inflammation in the absorbents of the arms for their whole length, or to produce paronychia, or suppuration beneath the tendons.

Owing to this cause it was that a man in the Macedonian had one of his fingers amputated.

Another rare case of punctured wound was caused while the United States was at anchor in Gibraltar Bay, by one of her men falling backwards in a boat in such a manner that a hook, fixed on its inside with its point inverted, was thrust into his loins so far and so firmly, that he was unable to rise or extricate himself. Nor was I able to accomplish this until I had, with a scalpel, enlarged the wound sufficiently to allow the exit of the hook. The wound was an inch deep and two and a half inches long. Simple dressings of adhesive strips and compresses were applied after the hook had been extracted, and the patient was put on low diet. But sloughing occurred on the fifth day after the accident, at the bottom of the wound, the lunar caustic had to be applied, the patient was purged with Epsom salts, and it was nearly a month before the wound cicatrized.

Within a few days of one another, and during the present summer, three persons at the Navy Yard, Philadelphia, have been seriously injured. One had his left hand fractured and lacerated, and his left thigh most extensively contused and abraded by a halser breaking loose from around the bow bits of the *St. Jacinto*, while she was swinging off from the yard. Another man, a marine, marching and keeping step with a company of 25 others, on their way on board of her to act as her guard while on an intended trial excursion, fell down into a slip in front of one of the ship houses, in consequence of the planks breaking down where joined in the middle of the

bridge. All fell together in a confused heap, with their muskets scattering in every direction, but none were seriously hurt except the above marine. He was struck in the forehead with a bayonet, had his left leg caught under a plank, the ankle luxated inwards, and the fibula broken four inches above the outer malleolus.

The third person injured was one of the marine guard of the Receiving Ship, at anchor in the river. He had been on shore, returned on board in the evening tipsy, and demanded his supper of the cook, who refused it, according to orders from the sergeant, as the former had come after the hour fixed for it. The cook being then insulted by him with some gross epithets, seized a heavy potatoe masher made of an oar handle, struck him with it on the right cheek bone, and knocked him senseless to the deck. He fell backwards; my steward, Mr. John Brady, ran to his assistance, bathed his head with water, and applied aqua ammonia to his nose; but he expired before I could reach him, and was found by me at midnight stretched out on the forecastle, and perfectly frigid. It was my wish to examine him by dissection, but as the case was within the jurisdiction of the city it was improper to do so. I contented myself with inquiring into the manner in which he had been killed and examining the external marks by lamplight. Only a small contused wound could be seen over the right malar bone. I could hardly believe, however, it could have been the direct cause of death, and concluded it was probable that the striking of his occiput upon the deck, while the muscles of his neck were much

relaxed by intoxication, had been the cause. The next day he was dissected at the coroner's inquest. I was not informed of the time fixed for it, and was not present, but have been informed by an eye witness, that the left middle meningeal artery was found ruptured, the left orbital plate of the frontal bone fractured by contre coup, and that the brains were thrust between the plate and the orbit of the eye. The inquest brought in a verdict for murder, but the jury of the Court of Quarter Sessions, in August, rendered a verdict of manslaughter, with a recommendation of mercy to judges Kelly and Allison, based on the prisoner's good character and the deceased's intemperate habits. The doubts also concerning the two blows, proved to have been given, having directly caused his death, their having been no previous animosity between the parties, no mal prepense having existed, and the charge of murder in the first degree being in no manner proved, undoubtedly influenced the giving of the above verdict. The court, according to it, sentenced the prisoner to two years confinement in the Eastern Penitentiary of Pennsylvania.

Of the above case I will make no other remark than that I was unexpectedly summoned as a witness, on the trial, expressed my doubts of the real cause of death, but from not having been present at the autopsy, had to confine my testimony to my personal knowledge of the accused and deceased, and the external examination made by me. A witness, however, gave it as his opinion that the blow on the cheek ruptured the artery, and the effusion of blood between

the skull and dura mater caused death by compression of the brain. This I think less probable, as before inferred, than that the blow received by striking his head on the deck, or the second blow inflicted, had communicated its violence through the occipital, temporal and parietal bones, which we know are very solid in a man so advanced in age as the deceased. In conclusion, it may not be inappropriate to remark that, as the medical officers in our service have charge of all the sick and injured in it, and are thus summoned to civil courts, on trials like the above, it would be more satisfactory to the former and better serve justice, if no coroner's inquest were held on the dead in the service, without some of them being present to impart or receive the information required upon trial. Why, too, should a large extra fee be paid by the commonwealth of Pennsylvania for inspection by the coroner, or any one he may employ, when the medical officers of the navy would make the dissection without any charge or expense to the State?

CHAPTER XVI.

Fracture of the Clavicle, Arm, Forearm, Thigh, Leg, Patella and Spine. Splints and other Apparatus employed. General Treatment. Complicated Cases of Fracture, and Dislocation of Femur and Spine. Strains, Sprains and Luxations of Limbs. Hernia; Causes and Treatment. Frequency of Inguinal Hernia, and Method of Treatment, locally and generally.

Besides those already described, a large number of others occurred, from various causes, to the head, limbs and extremities, in which almost every bone constituting them were involved. A number were caused by accidents on shore, and proved that sometimes at least drunken men are hurt by falls, and especially while riding on horseback, or walking down a flight of steps. From these causes three men of one of the ships suffered fracture of the clavicle, and one a dislocation of it, within the same month. Another man broke a clavicle by falling on deck against an eye-bolt, which was made of iron; and other men had their forearms fractured, and were cured by the use of the common pads, compresses, splints and bandages, adapted to the different persons and indications. Fractures of the clavicle were mostly cured by the application of Dessault's triple bandage, and a pad in the axilla, but the first-named we found too troublesome to put on and keep adjusted. It moreover required more time to be well applied than could be conveniently spared on board ship. For these reasons, of late years we have sub-

stituted Dr. Fox's sling, with a slight modification, using it in the form of a loose sleeve, which keeps the forearm more perfectly in the necessary position, and is less liable to become disarranged and soiled, or to allow the shirt sleeve or other coverings of the forearm to get so. After the lapse of some days, great accumulations of dirt are apt to form within the sling, on board of ordinary vessels with the usual complement of men, and in active service. This apparatus proved equally, if not more efficient than Dessault's, without having the inconveniences of it, and may be recommended, not only for the cure of fractured clavicle, but likewise for dislocation of either extremity. For the cure of fractures of the leg, Hutchinson's splints and a box were used. Two cases of fracture of both bones were treated at the Naval Asylum. One case was caused by the patient having fallen down a hatch into the hold of the Mississippi steam frigate, while at the Philadelphia Navy Yard. At the same time he dislocated the left humerus. This was at once restored to its place, and the limb was set in a fracture box, in which it was kept in a state of extension and counter-extension by bands applied to the limb, foot-board and upper ends of the side pieces. A pillow was used instead of pads, Scaltetus's bandage was employed, and the limb kept wet with cold water, but the weather being warm, the combined heat and moisture generated a large number of maggots in the dead softened cuticle upon the heel, and obliged me the day after his admission into the hospital to renew the dressings, readjust the bone, substitute raw cotton about the

fracture, cover the pillow with oil cloth, and apply a bladder filled with pounded ice over the fracture in place of the water. Three days afterwards a solution of sugar of lead was also applied, and his tongue having become thickly furred, he was prescribed a pill of blue mass twice a day, and a dose of rhubarb, calcined magnesia and oil of cloves the next morning. The box likewise was too long for him; the lower piece caused a good deal of pain to the under part of thigh, and a shorter box had to be substituted.

The other case was a compound comminuted fracture of the right tibia and fibula, just above the ankle-joint, caused by a large beam at the above Navy Yard. Three wounds were made over the tibia, and both bones broken into several pieces, which brought on great irritation, followed by sloughing and profuse discharge of bloody pus and ichor. A number of large spicula of both bones, in the interim, became separated, and were extracted with forceps. Much fever ensued, fistula formed, and the patient underwent a protracted local and constitutional treatment. The former consisted chiefly of lotions of superacetate of lead and sulphate of copper, linsced poultices, scarification, incisions to disengage the spicula, dressings of adhesive plaster, and the chloride of sodium to destroy the fetor of the discharges, and sponges placed beneath the fractures to absorb them. The latter treatment was varied agreeably to the condition of the patient. While in a state of vigor and affected with fever, he took a number of blue pills, castor oil, magnesia and rhubarb, epsom salts and magnesia, a solution of tartar emetic and spiritus

mindereri. When in pain and restless, he was given acetate of opium ; and when debilitated, an infusion of cinchona and orange peel and quinine in solution were prescribed. For soreness of the heel and hips, which were caused by his long confinement, compresses and lotions were used ; and to keep the limb extended, the fracture box was employed, but it did not do so satisfactorily ; the limb became an inch shorter than the other, and Hutchinson's splints were substituted efficiently. At the end of two months the tibia became united firmly. The fibula, however, was so completely crushed, that for a long time after the union of the above bone it remained unhealed, and caused a large fistula on the posterior face of the ankle. A fragment of the fibula, three or four inches long, continued loose ; fungus sprang up, the nitrate of silver had to be applied, and five months after the accident, when I left the Asylum, the limb was not entirely healed. It was gratifying, nevertheless, to have saved the leg from amputation, which seemed almost inevitable ; and it also affords me pleasure to state that the first case, although left likewise in the hospital, eventually recovered, with the exception of some lameness of the limb, with which he was affected when we met some years after he was injured. I will further add that simple fracture of the fibula was treated successfully, as practised by Dr. Physick, by the application of a pad extending from the inside of the knee to the ankle, a splint laid over the former and extending beyond the foot, and then by making fast the latter flexed inwards, over the lower end of the pad, and held in its position by means of a roller, while another passed around the



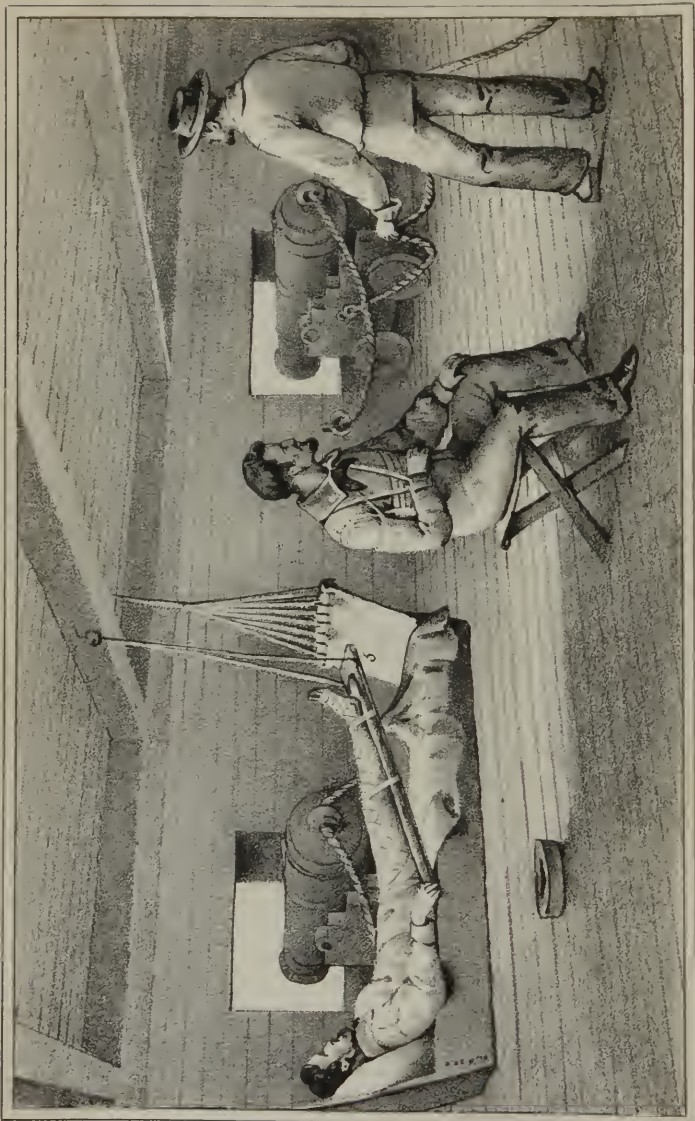


PLATE C.

1. Torn foot when healed.
2. Case of Fractured Patella.
3. Inclined Splint, suspended and secured from slipping backwards by a band and hook above.
4. The injured limb dressed and bound to the splint, to prevent the former from being drawn from it during the rolling and tossing of the vessel.
5. Sleeve-like sling used for fractured clavicle, with axillary pad and bands attached to the anterior and posterior part of the sling, to support the wrist and keep the elbow to the side.

upper part of the leg, pad and splint, kept the two latter in place.

Several cases of fractured patella were cured by means of a figure 8 bandage around the knee, and a pad and long splint fixed behind the leg and thigh, by the application of a roller extending from the feet to the thigh. During the treatment the limb was kept upon an inclined plane made of pillows; but when the ships were at sea, their rolling disturbed the position of the patients. The limb rolled also to a certain extent, and it was found best to suspend the foot by a sling attached to a hook in a beam above the foot of the cot. To effect perfect union of the bone, and assist the figure 8 bandage, adhesive strips were usefully employed. A number of cases of fractured femur were treated in four of the six ships in which I served, and other cases in various vessels of the squadrons to which they belonged. One of the worst cases in the former occurred on board of an American schooner, some days after her arrival at Rio, and was brought for treatment on board the Macedonian. The man had fallen from aloft with such force as to break the right femur obliquely across, and drive the upper fragment through the soft parts into the deck. No apparatus had been applied when he arrived. The bone was still projecting, and the splints put on were unable to prevent it, or restore the limb to its natural length. They were of peculiar structure, and had extension, regulated by wooden pins, thrust through holes in the lower ends. It took six months to effect a cure, and then the limb remained shortened three inches. To still

further exercise his fortitude, the poor fellow soon afterwards was seized with confluent small-pox, and suffered severely, though he escaped death.

In the same ship, the late Mr. Fletcher, our acting Chaplain, was thrown from his seat on the gun-deck by a lurch of the ship, tumbled against the combing of a hatch, and had the neck of one of the femurs fractured. No apparatus was thought necessary in his treatment; he was simply confined to his berth, in a recumbent position, and recovered without perceptible shortening of the limb; but after he left the service he suffered from the fracture, and had a slight impediment in walking for a considerable period.

The above two cases were under my charge only in part, as I was then an assistant. All the others were exclusively so, and occurred subsequently to my promotion. They were treated as well as others which have come under my care, publicly or privately, by means of Dessault's splints, as modified by Hutchinson, Physick, and Gibson, but instead of using a handkerchief or small gaiter, with straps attached to it for extension, I employed a buckskin gaiter extending above the calf of the leg, and regulated extension with the tourniquet, having the straps passed through it, as that used for stopping hæmorrhage. This gaiter I have found much easier by its pressing chiefly on the fleshy portions of the leg, instead of upon the bony parts of the ankle and foot, as is done by the small gaiter. The above apparatus appeared to me to answer every indication. The patients soon became accustomed to it and comfortable, and though



PLATE D.

*Fractured Femur treated with Physick's modification
of Dessault's Splints.*

1. Long buckskin gaiter extending above the calf of the leg.
2. Extending bands, regulated by means of a tourniquet screw.
3. The foot of the cot let down, and a rope substituted for the lanyards, to allow room for the splints.

the splints were too long to be used in a common cot, the difficulty was removed by letting down the foot of it, putting a board beneath the mattress to elongate the bottom, and then passing a rope around the cot and making it swing by the hook above.

Amesbury's splint was tried in one case at first, but left off because of its not making extension enough. Hagedorn's splint, as modified by Dr. Gibson, might have been used had one been at hand, and Dessault's not have been; but this is decidedly preferable, if for no other reason than that it does not confine the sound limb, allows the patient the satisfaction of moving it about, and does not make the joints of both limbs stiff from being kept for weeks unused and bound up by splints and bandages, and lashed tightly by gaiters to the foot-board, as in using the former apparatus. Both of the cases not cured under the use of Dessault's modified splints, were treated with them; but the first one occurred just before the arrival of the ship at home, and was sent to a hospital before cured. I have no doubt, however, that the limb got well under their use, though it was much contused and had to be first leeched. The fracture in this instance was caused by the patient having been engaged with one or more men in hoisting a barrel of pork from the hold. The barrel got loose while the ship lurched, and rolled against the back of his legs, with such force as to break the bone completely through eight inches above the knee joint. Great pain and tumefaction at once followed; twelve leeches had to be immediately applied, the patient took a ʒj. of laudanum and some wine to bring on reaction, and afterwards was given

a dose of castor oil and the spiritus mendereri every two hours to subdue febrile action. The second case not cured with the above splints was of a very aggravated nature. The patient, Moses Bodwell, a sailor in the prime of life, of great strength, activity and ardor, was in the main top while the Delaware, with other vessels of the Brazil squadron, were striving to outdo one another in shifting main topsail yards. The Delaware's old one had been lowered, the new one was being lifted to its place, when it hung abreast the top from some impediment. Bodwell, anxious to free it, leaped upon it; the ship rolled, the yard, a very large compound one, of timbers, struck against the larboard side of the top and shook him off, when 60 or more feet above the spar deck. He fell vertically down to it, with his feet foremost, struck the deck near a gunslide, dislocated his right arm, received two wounds, one anterior the other posterior to the anus, severely shocked the spine at the junction of the dorsal and lumbar vertebræ, and broke his right femur into three pieces. Two were the condyles, and the third the shaft of the bone. Great agony was caused, especially in the spine, he became completely prostrated, and to resuscitate him we had to use frictions and hot applications, and to give tr. of opium and lavender, aqua ammonia, peppermint tea, wine and brandy. Nothing relieved his pains, and he uttered loud complaints against officers for the reckless manner in which they gave orders—forgetting that no one directed him to leap upon the yard. We reduced the luxated humerus, applied Dessault's modified apparatus to the injured limb,

and dressed his wounds ; but he breathed his last six hours after the sad catastrophe.

Two other cases of fractured femur in the Delaware, though attended with severe contusions, readily healed by the use of the same apparatus. One case was caused by the falling of a heavy plank upon the right thigh, from the spar deck to the gun. The bone was broken near the middle, much pain and swelling ensued, but were cured by using the evaporating lotion. The other case was caused by the patient having fallen through the main hatch into the hold, and struck a fore and aft piece in his descent. At the same time he had his left shoulder and right elbow much contused. Fungus sprung up on the latter, but was removed by applying lunar caustic and a wash of sulph. of zinc, and he was also cured of his other injuries. .

Such good luck did not attend a youth of 17, who fell from the mizzen topsail yard of the Savannah, and suffered from compression of the brain, without discoverable fracture of the cranium, had his right humerus luxated and broke the left femur. Though no restoration of his senses took place, the luxation was reduced, the bone set in vain, but he died in a state of coma ten hours after the accident.

Besides the fractures mentioned, the only other one I shall speak of was that of the spine. The patient was a stout sailor of twenty-seven years of age, named Robert Alberger. He was both active and strong, but carelessly walking over the after ends of the booms, or spars stowed amidships upon the spar deck, slipped from them, fell down the main hatch, also struck a cross piece, and tumbling into the main

hold to the depth of 30 feet, broke and luxated his spine at the junction of the lumbar and dorsal vertebræ. At the same time he received severe contusions of the ribs and left shoulder. Stout as he was, the spine was so completely fractured that a curvature of three or four inches backwards was produced, and immediate paralysis, with loss of sensation and motion, occurred in the lower extremities. The bladder lost the power of contraction, the bowels became torpid, perfect prostration of strength followed, and yet his mind was not impaired. By the use of internal and external stimulants already mentioned, reaction was induced in eight hours. Cups, blisters, issues, pills of calomel and colocynth, blue mass, magnesia and rhubarb, were subsequently employed as indicated. In a few days his urine, from being bloody, became mucous, next purulent and fœtid; he suffered much pain in the loins and abdomen, took the extract of stramonium, acetate of opium and infusion of buchu leaves, had a cataplasm and cups put over the abdomen, and when his strength permanently failed, was given a bitter infusion. No remedies were of durable utility; he became weaker and weaker, gradually wasted away, from being very stout and large became thin and cadaverous. Inflammation then attacked both hips, ulceration and gangrene appeared upon them about a month after he fell, the splints and belt about his loins proved useless, and a vain attempt was made to sustain his strength by giving the volatile julep and some cordials. His urine could not be drawn off without great difficulty, from its being surcharged with pus and mucus, which so blocked

up the orifices in the end of the catheter introduced into the bladder, that the urine could not enter them until an accurately fitting gum-elastic bougie had been first passed down to them through the catheter, and when withdrawn had opened them by acting like the piston of a pump or syringe, and causing suction by the vacuum created. To give proper firmness to the bougie a wire was kept in it, and in the above manner, at one time, three pints of urine were drawn off, which had been retained. But this afforded only temporary relief, he gradually dwindled to a mere skeleton and died 38 days after he was injured.

Besides the dislocations mentioned, a considerable number of others fell under my care. The most important of them were of the arm, and caused in different modes, some by falls, others by suddenly throwing the limb over the head, or by descending ladders while holding on to the hatches by their combings or borders, and then slipping. One of the last cases was that mentioned by me in the *Medical Examiner*, as having occurred in the person of a young man while coming around Cape Horn. No one on board his ship knew how to restore the humerus to its socket, adhesions formed in the axilla, and, by the time he applied to me for relief, were so strong, that after several attempts, with and without pulleys, had failed to reduce the bone, the patient declined undergoing any more, having been informed of the danger of rupturing the axillary artery. This was the only unsuccessful attempt of remedying this deformity. All other cases of it were cured by extension and counter-extension, commonly made by laying the patient on

the deck, placing a heel in the axilla and pulling the hand of the injured side in a line with the body, and at the same time directing the head of the humerus towards the glenoid cavity. But in some instances the bone was restored by seating the patient, relaxing the muscles above the joint by raising the arm directly upwards, and making extension in that direction, while the scapula was firmly held in its place by an assistant. When my own strength was not sufficient to make the necessary degree of extension in either method of reduction, that of one or more other persons was employed.

Numerous strains and sprains of the lower extremities were treated, but save the total luxation of both bones of the leg, caused by the foot being torn off, and before mentioned, none of interest happened. Not a single case of luxated femur came under my observation, and so few positive luxations of other bones of the extremities, that I am at a loss how to account for it, unless it be ascribed to the great suppleness and strength imparted to the joints of sailors by their constant exercise. Hence, those who have become so in youth possess great agility and muscular power, and rival circus riders and rope dancers, in these respects, although they cannot equal the former in horsemanship, nor balance themselves so skilfully as the latter. I have found, then, that experienced seamen seldom suffer dislocations, without great violence, and these are most apt to happen on shore while they are riding on mules or horses, and in a state of intoxication. But the only case of dislocation of the clavicle met with among

sailors, occurred in one while in that condition, and tumbling upon a stone pavement from a flight of steps. This luxation took place at the outer extremity of the bone, from his having fallen upon the back of the scapula and ruptured the ligaments between the acromion process and the clavicle. But although sailors are not so liable to dislocations as landmen, in proportion to their exposure, the former probably experience ruptures more frequently than any other class of men, save caulkers, who work while squatting. From this circumstance, I have been informed that scarcely a caulker of Port Mahon is free of some kind of rupture, which is commonly inguinal, or scrotal of large size, and perceptible even through the clothes of those affected. The former fact is justly ascribable to the violent muscular exertions sailors are obliged to make, in performing the many evolutions of the body required in the discharge of their duties. From time to time hardly a muscle of it or their limbs escapes severe exercise, and frequently, as when lying on the yards to reef sail, with their bodies in constrained attitudes, and pressing with their whole weight upon the abdominal viscera. Their performing many of their duties aloft, their liability to falls, either from thence or down the ladders and other parts, their frequent collisions, and receiving blows, accidental or intentional, cause them to be liable to ruptures. Hence, on the examination of the number of men in our naval service who have suffered from them, under my observation, I calculate that during an ordinary cruise, or one of three years, the average time of our ships of war on foreign stations, about one per cent of their men suffer her-

nia. In one frigate of those mentioned, and the ship of the line, which had between them rather more than 1200 men, ten undoubted cases of this injury happened. Another man of the latter ship, subsequently to her return home, asserted that he had been ruptured in her, but could not furnish evidence sufficient to warrant my giving him a certificate to that effect, and to enable him to obtain a pension. The most remarkable fact respecting the above cases is, that six of them, in the latter ship, were of inguinal rupture of the right side, and all of the ruptures were in that or the left one, save that of umbilical hernia, which occurred in the former ship while the patient was stooping and hauling a rope. The above fact, then, is contrary to that mentioned in speaking of the recruits rejected, eight out of nine of whom were ruptured in the left groin, and this we account for by the much greater exertions made by seamen with the right side of their bodies, and their stooping so much more to that side than to their left than men who have never been in active service at sea. From the efficacy of treatment for such injuries, as proved in my own practice of late years, as well as in that of many medical men who have written on the subject, I think such certificates have been too loosely given, and should not be until such treatment has been fairly tested. Therefore, when men now under my supervision get ruptured, I take them regularly upon my sick list, confine them, as much as practicable, in a horizontal position, return the contents of the hernial sac into the cavity of the abdomen, and retain them there by the careful application of a wooden, glass, or

other hard truss, but the latter, though preferable from not being stained, or rotten by absorbing perspiration, is objectionable from its being so smooth as to easily slip out of place, and allow the contents of the sac to return into it. To diminish their size, I likewise keep the patient on low diet, and frequently give gentle cathartics to expel undue accumulations of fæces, and diminish the calibre of the intestines as well as the thickness of their coats. By the above means we have succeeded in effecting the cure of several ruptures, saved the necessity of giving as many certificates, and that of as many pensions which otherwise would have been conferred by our government. By the cure of them, as well as other persons affected with hernia, just so many seamen were retained in the naval service who would have been expelled from it, to seek a miserable subsistence on shore or in the merchant service, entirely contrary to their habits and inclinations. Indeed, in my opinion, ruptured seamen are too indiscriminately discharged from service and refused entrance. There are many thereby lost to our men-of-war who, from their great skill, might be very useful in them, although they could not execute orders aloft with as much agility as before ruptured. There are many duties requiring less, or none at all, which might be done by them as well as by other persons. Why, then, where there is such a demand for able seamen, should those ruptured be entirely excluded from our men-of-war, as if tainted, like the lepers of old, who were expelled from towns and villages and forbidden human intercourse?

MEDICINES, &c., REQUIRED FOR A CREW OF FIFTY MEN

During a Voyage of One Year, in a Temperate Climate.

ARTICLES.	MODE OF ADMINISTRATION, &c.	
	Quantity required.	
	lbs.	oz.
Acacia gum.....	1	
" " pulv.....	1	
Acetum.....	4	
" colehiol.....	1	
" opil.....		2
" scellar.....	1	
Acidum benzoicum.....		2
" citricum.....	2	
" hydrochloricum.....		4
" nitricum.....	4	
" sulphuricum.....	4	
" " aromaticum.....	4	
" tannicum.....	3	
Aconitum napellus.....		2
Adeps suil.....	2	
Ether sulphuricus.....	1	
" Alcohol.....	8	
Alum.....		8
Aloes socc. pulv.....		8
Ammoniacum.....	6	
Ammoniac carbonas.....	8	
" murias.....	8	
Amylum.....	1	
Anisum.....		8
Anthemis nobilis.....	1	
Antimonii et potass. tart..		4
Aqua distillata.....	2	
Aqua ammonia.....	2	

Used chiefly in solution, in affections of the lungs, bladder, etc.

Used as the above, and for compounding medicines, etc.

Used as a menstruum, antiseptic, and a refrigerant, diluted or pure.

Dose, dr. 1, given pure or diluted, as a diuretic, for gout.

" grs. 10 to 15, as an anodyne, in water or syrup.

" dr. 1, diluted, as a diuretic, in dropsy.

" gr. 5, as an aromatic and stimulant, in pill or with borax in solution.

" gr. 5, as a diuretic, much diluted with water.

" grs. 5, in water oz. 1, as a tonic, in debility, etc.

" grs. 2, in water oz. 2, as a tonic, expectorant, etc.

" grs. 1, in water oz. 2, as a tonic, for night sweats, etc.

" ditto. ditto.

" gr. 2, in pill or powder, for diarrhoea and dysentery.

" gr. 1, in pill or powder, as an anodyne for neuralgia and rheumatism.

Used chiefly in making ointments.

Dr. 1 to 2, as a stimulant and antispasmodic, and to induce insensibility.

Diluted with water or pure, as a menstruum, etc.

Dr. 5 to 10, in powder or solution, as an astringent and tonic.

" gr. 10, in pills, to purge, for constipation, headache, etc.

" gr. 5, in emulsion, as a pectoral for chronic bronchitis, phthisis pulmonalis, &c.

" gr. 5 to 10, in emulsion, as stimulant in diseases of low form.

" gr. 10, dissolved in water or syrup, as an alterative and resolvent.

Employed chiefly as a menstruum, in pills and solution.

gr. 5, as a stimulant, in powder.

gr. 10, as a tonic, in powder, or cold or warm, as tonic and emetic infusion.

gr. 2, in solution, as an emetic; gr. 1/8, as an expectorant and diaphoretic.

Used chiefly for dissolving lunar caustic.

grs. 10 to 20, as a stimulant, well diluted, for headache. Used also as lotion in burns, &c.

Argenti nitras.....	2	Dose, gr. 1, in pill, for epilepsy and dysentery, as a tonic and astringent.
Arnica mont.....	4	“ gr. 5, in pill or powder, as a stimulant, diuretic, &c.
Acid arseuicum.....	2	“ do. 1-10th, in solution, with wine or water, as tonic, in intermittent fever.
Assafetide	4	“ gr. 5 to 10, in pill and emulsion, as stimulant, expectorant, and antispasmodic.
Aurantii cortex.....	4	“ scr. 1, given chiefly in infusion and combination, as a tonic.
Belladonna foliæ.....	3	“ gr. 1, in pill or powder, as an anodyne in nervous disorders.
Benzoinum.....	2	“ gr. 2, in pill or powder, as an aromatic stimulant.
Bismuth subnitras.....	2	“ gr. 1, in pill or powder, as antispasmodic and tonic.
Calamus	2	“ scr. 1, in pill and powder, as a stimulant and stomachic.
Calcis chloridum.....	10	Used as a disinfectant, in substance and solution.
Cardamomum	6	“ gr. 5, in powder, as aromatic and stimulant.
Camphora	1	“ gr. 5 to 10, in pill and powder, as an anodyne, antispasmodic, etc.
Cantharis, visicatorius	1	“ gr. 1 to 2, in pill, as a diuretic and stimulant to genital organs and bladder.
Cantharis vittata	8	“ gr. 1, in pill and tincture, as the above.
Carbo ligni	8	“ scr. 1, in powder, with water or syrup, as an antacid and tonic.
Capsicum pulv.	4	“ gr. 5 to 10, in solution, as a stimulant.
Caryophyllus	4	“ gr. 10, in powder, as an aromatic and stimulant.
Cassia Marilandica.....	3	“ dr. 1 to 2, infused, to purge, in fevers and other complaints.
Cera alba.....	1	Used chiefly in making cerates and plasters.
“ flava.....	1	ditto.
Ceratum cantharidis	2	Used for blistering the integuments.
“ resinæ	1	Used for dressing to burns, blisters and ulcers.
“ subinæ	8	Used for dressing raw blistered parts.
“ saponis	8	Used for removing swellings.
“ simplex	1	Used for dressing to wounds and ulcers.
“ zinci carb.....	4	ditto.
Cetaceum	1	“ scr. 1, in emulsion, as a pectoral and emollient.
Chenopodii foliæ et sem ..	3	“ oz. 2 gr. 1, infused in water or milk, as an anthelmintic.
Chondrus crispus	2	employed in decoction, as a nutrient.
Cinchona rubra.....	8	“ dr. 1, infused, or in powder, as a tonic.
Colchici radix	2	“ gr. 10, in powder, as a diuretic; but seldom used.
“ semen.....	4	“ gr. 5, ditto.
Chloroform	8	Employed chiefly as an anæsthetic, pro re nata.
Colombre radix.....	8	“ dr. 1, infused, or in powder, as a mild tonic in debility.
Colloidion	4	Applied as dressing to ulcers and wounds, by means of a brush.
Confectio rosa	8	Used chiefly as a menstruum, and in blue pill with mercury.
Conii foliæ.....	2	“ gr. 1, in pill or powder, as an anodyne and sedative.
Copaibæ bals.	1	“ dr. $\frac{1}{2}$ to 1, in pill and emulsion, or pure, on sugar as a diuretic, etc., in gonorrhœa.

MEDICINES, REQUIRED, &c.

ARTICLES.	Quantity required.		DOSE AND MODE OF ADMINISTRATION, &c.
	lbs.	oz.	
Coriandrum		2	Dose, gr. 10, used chiefly as an aromatic in combination.
Cornus Florida cortex		4	" gr. 1, in powder or infusion, for intermittent fever, debility, &c.
Creasotum		1	" gtt. 1, in emulsion, as antinauseant and anodyne in seasickness, &c.
Creta preparata		3	" gr. 10, in solution and combination with kino, etc., in bowel complaints.
Crocus	1	2	" gr. 10 to 20, in powder, as a mild stimulant and anodyne.
Cubebæ pulv.		2	" dr. 1, powdered, as diuretic and sedative in gonorrhœa.
Cupri sulph.		1	" gr. 1 to 10, as a tonic and emetic, in solution.
Cuprum ammoniacum		1	" gr. 1 to 2, as a tonic, in neuralgia, etc.
Digitalis, f. lia		3	" gr. 1, in powder, as a diuretic and sedative in dropsy, phthisis and disease of heart.
Diosmæ folia		8	" gr. 1, infusion, as a diuretic, in cystitis, etc.
Elaterium		1	" gr. 1, in pill, as a purgative, in ascites and other diseases.
Elaten	1	1	ditto.
Emplastrum ammoniac		1	Used as a plaster, to cure corns and tumors.
" hydragryi		3	ditto.
" piels cum canth.		3	to cure buboes, nodes, etc.
" plumbi		3	Used as a counter-irritant in coughs, etc.
" roborans	1	8	Used chiefly in making adhesive plaster.
" saponis	1	8	Applied for local and chronic rheumatism, weakness, &c.
Eupatorium			Applied for the cure of swellings and tumors.
Extractum acemiti		1	Applied for the cure of swellings and tumors.
" belladonnæ		1	oz. 1/2 to 1, in decoction, as diaphoretic in catarrh, rheumatism, etc.
" cinchonæ		1	gr. 1, in pill, as an anodyne and sedative.
" colocynt. comp.		3	gr. 1, ditto.
" conii		2	gr. 5, as a tonic, in debility, intermittent fever, etc.
" gentiana		1	gr. 5, in pill, as a purgative, in hepatitis, etc.
" glycyrrhizæ		2	gr. 1, in pill, as an antispasmodic, sedative, etc.
" hyoscyami	1		gr. 5 to 10, in pill, as a tonic.
" jalapæ		1	Used chiefly in solution, and as a menstruum, in pectorals, etc., for pulmonic affections.
" julelandis		3	gr. 1, in pill, as an anodyne and sedative.
" nucis vomicæ		2	gr. 5 to 10, in pill or powder, as a purgative.
" quassia		1	gr. 10, in pill or mass, as a purgative, in hepatitis, etc.
" sarsaparillæ		3	gr. 10, in pill, as a tonic and astringent.
"		4	ditto.
"			dr. 1/2 to 1, in solution, as a diaphoretic, diuretic and alterative.

Extractum stramonii fol.	1	Dose, gr. 1 to 2, as a sedative and anodyne, in pill, in nervous disorders.
“ “ sem.	1	“ gr. 10, ditto.
Terri citras.	3	“ gr. 5 to 10, in pill or solution, as a chologogue in hepatitis.
“ iodium.	2	“ gr. 5, in pill or solution, as a tonic.
“ oxidium hydratum.	1	“ gr. 1 to 5, in pill or solution, as a tonic and alterative in scrofula, etc.
“ phosphas.	1	“ gr. 5 to 10, in powder, as an antidote for arsenic, with syrup or molasses.
“ subcarbonas.	1	“ gr. 1, ditto. as a tonic.
“ sulphas.	3	“ gr. 5 to 10, in powder, as a tonic in nervous and other disorders.
Fœniculum sem.	4	“ gr. 2 to 4, in powder, pill and solution, as a tonic in nervous and other disorders.
Gallæ pulv.	2	“ gr. 5, in powders, but used chiefly as an aromatic.
Gambogia pulv.	3	“ gr. 5 to 10, in powders, as an astringent and tonic in hemorrhages.
Gentianæ pulv.	2	“ gr. 3 to 8, in pill, as a cathartic.
Glycyrrhizæ pulv.	8	“ ser. 1 to gr. 1, in infusion, as a tonic.
Granati radices cort.	8	Used chiefly in making pills and as an absorbent.
Guaiaca lignum.	3	“ ser. 1 to dr. 1, in decoction, as tonic and astringent in chronic diarrhoea.
“ resina.	1	“ ditto. with sarsaparilla in syphilis.
Hordeum.	4	“ gr. 5 to 10, in tincture, as stimulant and tonic.
Humuli folia.	5	Used in decoction, chiefly for drink.
Hydrag. chlor. cerro.	8	“ dr. 1 to 4, used in decoction, as tonic and sedative.
“ chloridum mitis.	2	“ gr. 1-10th to 1-12th, in pill or syrup, as an alternative, in syphilis, etc.
“ cyanuretum.	4	“ gr. 10 to 20, as a purgative; gr. 1, as an alternative and salivant.
“ iodium.	1	“ gr. 1-16th to 1-18th, in pill or syrup; gr. 1, as an alternative and salivant.
“ “ bub.	1	“ gr. ½ to 1, in pill or syrup, as an alternative in syphilis and scrofula.
“ oxidium nigrum.	1	Used principally in ointment.
“ rubr.	1	“ gr. 1 to 2, in powder, as an alternative.
“ sulphas flavus.	1	Used chiefly in ointment, for ulcers and chancres.
Hydragryum.	1	“ gr. 2 to 3, as an emetic; gr. 1, as an errhine with powdered starch.
Ichthyocolla.	4	“ Is not used in its pure state, as it is then inert.
Iodinum.	8	Used in decoction, as nutrient.
Ipecacuanhæ.	2	“ gr. 1 to 2, in Lugol's solution, in scrofulous disorders, etc.
Iris florentinus.	4	“ gr. 10 to ser. 1, in infusion, as an emetic; gr. 1, as diaphoretic and nauseant in dysentery, etc.
Jalapæ, pulv.	4	“ ditto in powder, as an astringent to gums, etc.
Kino.	4	“ gr. 10 to 20, as a purgative, with molasses.
Lac sulphuris.	4	“ gr. 10, in powder or tincture, as astringent, in diarrhoea, etc.
Lactucarium, extract.	4	“ dr. 1 to 2, in powder, with molasses, as laxative.
Linimentum ammo.	1	“ gr. 5, in pill or solution, as an anodyne.
“ calcis.	1	Used for frictions, in rheumatism, sprains, etc.
		Used principally for dressing to burns.

ARTICLES.	Quantity required. lbs., oz.	DOSE AND MODE OF ADMINISTRATION, &c.
Liuimentum camphoræ...	1	Used for frictions, in chilblains, rheumatism, etc.
" cantharidis...	8	" for frictions, to induce hasty vesication in acute diseases.
" terebinthine...	8	" for dressing to burns, and for frictions.
Janii sem.	5	" for a decoction, as a drink and menstruum in nephritis, etc.
" pulv.	25	Mingled with hot water for poultices.
Liquor ammo. acetæ	1	Dose, oz. $\frac{1}{2}$ to 1, as a diaphoretic, diuretic and laxative in fevers, etc.
" calcis	1	" dr. 1 to 2, with milk, as an anti-nauseant and antacid.
" plumbi suba. dilut.	8	Employed externally, as a lotion and injection.
" potassæ	2	Employed to create issues and remove fungus; 10 to 20 gtts. as an antacid and diuretic.
" potas. arsenitis	2	gtts. 10 to 20, as a tonic in intermittent fever.
Lobelia folia	2	" gr. 10, infused, as an emetic, but is a hazardous one.
Lupulin	1	" gr. 5, in infusion, pill or powder, as an anodyne.
Magnesia usta	8	" dr. 1 to 2, in solution, as an antacid and laxative in dyspepsia, etc.
Magnesia carbonas	8	" ditto.
" sulphas	10	" dr. 2 to oz. 1, in solution, as a cathartic.
Manna	8	" ditto.
Marrubium	10	Used in decoction, as a nutrient, with sugar, nutmeg, etc.
Melale officinalis radix, etc.	8	" dr. 1 to 2, in decoction, as a diaphoretic, astringent and tonic.
Mel Despumatum	1	" " ditto.
Melissa officinalis	8	" dr. 2 to oz. 1, used as a condiment, nutrient and menstruum.
Mentha piperita	4	" ditto. used in decoction, as a diaphoretic, etc., in catarrh, etc.
" viridis	4	" dr. 1 to 2, in decoction, as an aromatic and antispasmodic.
Mezereum rad. cort.	4	" ditto.
Morphiæ acetæ	1	" dr. $\frac{1}{2}$ to 1, in decoction, with sarsaparilla, as a diaphoretic and alterative, etc.
" sulphas	1	" gr. $\frac{1}{4}$ to $\frac{1}{6}$, in pill and powder, as an anodyne.
Mucilago acaciæ	1	" ditto.
" tragacanthæ	1	Used chiefly in forming pills, as a menstruum.
Myrrha	2	" ditto. for troches.
Nux vomica	1	" gr. 10, in pill and powder, as a tonic, astringent and stimulant.
Nitric æther	1	" gr. 5, in pills and powder, as an astringent and stimulant.
Oleum amygdalæ	1	" dr. $\frac{1}{2}$ to 1, diluted, as stimulant, anodyne and antispasmodic.
" anisi	1	" gtts. 5 to 10, in emulsion, as a menstruum, etc.
	1	" gtts. 1 to 2, in pill, as an antispasmodic, etc., in colic and other digestive disorders.

<i>Oleum cajuputi</i>	1	Dose, gtt̄s. 3 to 5, in pill and emulsion, as an antispasmodic and stimulant.
" <i>caryophylli</i>	1	" gtt̄s. 1 to 2, in pill, as an anodyne, and as an aromatic, in toothache, etc.
" <i>chenopodii</i>	1½	" gtt̄s. 10 to 20, in emulsion, as an anthelmintic.
" <i>cinnamomi</i>	½	" gtt̄s. 1 to 2, chiefly used as an aromatic, to flavor pills, etc.
" <i>cubebæ</i>	2	" gtt̄s. 10 to 20, in pill and emulsion, as a sedative and diuretic.
" <i>feniculi</i>	1	" gtt̄s. 1 to 2, in pill and emulsion combined, as an aromatic.
" <i>juniperi</i>	1	" gtt̄s. 5 to 10, in pill and emulsion, as a stimulant and diuretic.
" <i>lavandulæ</i>	1	" gtt̄s. 1 to 2, in tincture, as a stimulant and aromatic.
" <i>limonis</i>	1	" gtt̄s. 1 to 2, used as an aromatic, alone or united
" <i>lini</i>	2	Used for frictions, alone or with lime water.
" <i>menthæ pip̄t.</i>	1	" gtt̄s 1 to 3, in pill or emulsion, as an antispasmodic, etc.
" " <i>viridis</i>	2	" ditto. ditto.
" <i>morrhue</i>	4	" dr. 1 to 2, alone or in emulsion, as a tonic, alterative, etc., in phthisis, etc.
" <i>olivæ</i>	4	" dr. 2 to oz 1, alone or as a purgative, mostly for frictions, etc.
" <i>origani</i>	1	" gtt̄s. 1 to 2, in pill, as a stimulant.
" <i>ricini</i>	4	" oz. 1, alone or in emulsion, as a purgative in costiveness and dysentery.
" <i>roseæ</i>	1½	" gtt̄s. 1 to 2, used as aromatic chiefly, in unguents.
" <i>rosmarini</i>	1	" ditto. as a stimulant, in pill, etc.
" <i>salinæ</i>	1	" ditto. in pill, as a diaphoretic and stimulant in rheumatism.
" <i>sa-safragis</i>	1	" ditto. ditto.
" <i>succini rectific.</i>	1	" gtt̄s. 5 to 10, ditto. as stimulant and antispasmodic.
" <i>terebinthinæ</i>	4	" gtt̄s. 10 to 20, in emulsion, as stimulant, in typhoid fever, etc.
" <i>tigli-</i>	1	" gtt̄s. 1, in pill, as a hydragogue, in dropsy and typhoid fever, etc.
<i>Opium</i>	8	" gr. 1, in pill or powder, as an anodyne in numerous disorders.
<i>Oxymel scillæ</i>	8	" dr. 1 to 2, diluted, as expectorant and diuretic, in brouchitis, dropsy, etc.
<i>Pilulæ aloes et myr.</i>	8	" gr. 5 to 10, as a tonic, stimulant and laxative.
" <i>ferri carbonatis</i>	2	" gr. 5 to 10, as a tonic in chronic and nervous diseases.
" <i>rhei et ferri</i>	4	" gr. 5 to 20, in water as an alterative and purgative.
" <i>sap̄nis comp.</i>	4	" gr. 10 to 15, as a laxative and tonic, in dyspepsia, with debility.
<i>Pix abietis</i>	2	" ser. 1 to dr. ½, as a laxative and antacid, in dyspepsia, with debility.
<i>Plumbi acetis</i>	8	Used as a plaster in chronic rheumatism, etc.
" <i>oxidum semivit.</i> ..	4	" gr. 1 to 5, in pill, for an astringent and sedative, in diarrhœa and hæmorrhage.
<i>Potassa pura</i>	1	Employed in making adhesive plaster, etc.
" <i>acetas</i>	1	Employed as a caustic for issues, etc.
" <i>bicarbonas</i>	2	" dr. 1 to 2, in solution, as a diuretic, diaphoretic and laxative.
" <i>carbonas puras</i> ..	8	" dr. 1 to 2, in solution, with water or in molasses, as a refrigerant, diuretic and purgative.
" <i>nitras</i>	4	" dr. 1 to 2, in solution, as an antacid, diuretic and laxative.
	4	" gr. 5 to 10, in powder or solution, as refrigerant and diuretic in fever and dropsy.

MEDICINES REQUIRED, &c.

ARTICLES.	Quantity required. lbs. oz.	DOSE AND MODE OF ADMINISTRATION, &c.
Potasse sulphas	2	Dose, dr. 2, with syrup or molasses, to purge, but rarely used.
“ iodidum	8	“ gr. 5 to 10, in solution, as alterative, in syphilis and scrofula.
Pruni pulpa	1	“ dr. 2, in solution, as a laxative, in costiveness from sea-sickness.
Pulv. ipecacuanha et opii	4	“ grs. 5 to 10, in molasses, as an anodyne and diaphoretic in rheumatism, dysentery, etc.,
Quassia, rasp.	4	“ scr. 1 to dr. 1/2, in decoction, as tonic, stimulant and diaphoretic.
Quinine murias.	2	“ gr. 1 to scr. 1, in pill, powder and solution, in intermittent and remittent fever, etc.
Quinine sulphas	2	“ ditto. ditto.
Rhei rad. pulv.	8	“ gr. 10 to scr. 1, with molasses or in water, as a cathartic.
Salviae folia	1	“ dr. 1 to 2, infused, as a gargle, diaphoretic, and in tonsillitis, catarrh, etc.
Sanguinaria	1	“ gr. 10 to scr. 1, in pill, pulverized and infused, as an emetic; gr. 1 to 5, as nauseant, alterative, etc.
Sapo. castill.	1	“ scr. 1 to dr. 1, in pill, as a laxative and antacid.
Sago	4	In decoction, for nourishment, with condiments.
Sarsaparilla radix cont.	2	“ dr. 1 to 2, in powder, but chiefly in decoction, as a tonic, alterative, diaphoretic, etc.
Sassafras medulla	2	“ scr. 1 to 2, in decoction, as a collyrium and astringent.
“ radix cortex	8	“ dr. 2 to 3, in decoction, as a diaphoretic, alterative and sedative.
“ lignum	2	“ oz. 1/2 to 1, ditto.
Scammonie ext.	2	“ gr. 10 to 15, in powder or pill, as a cathartic.
Scilla pulv.	2	“ gr. 1 to 2, in powder or pill, as a diuretic, expectorant, etc.
Senegre radix	1	“ gr. 1 to 2, in powder or decoction, as an expectorant; gr. 10, as a purgative; scr. 1, as emetic.
Senna alexand.	4	“ dr. 1 to 2, in decoction, as a purgative, with liquorice, etc.
Serpentariae rad.	4	“ dr. 1 to 2, in decoction or powder, as a tonic.
Sinapis pulv.	1	“ dr. 1 to 2, in substance or decoction, as a laxative or emetic.
Sodae bicarbonas	2	“ scr. 1 to dr. 1, in solution, as antacid, laxative and diuretic.
“ boras	1	“ gr. 10 to scr. 1, in solution or powder, as a diuretic, gargle, in tonsillitis, etc.
“ et potasse tart.	2	“ oz. 1/2 to 1, in solution, as a cathartic.
“ sulphas	1	“ oz. 1/2 to 1, dissolved in hot water, as a cathartic.
Spiritus aetheris nit.	8	“ dr. 1/2 to 1, diluted, as an anodyne, stimulant, etc.
“ sulph. comp.	8	“ ditto. ditto.
“ ammonia aromat.	1	“ scr. 1 to dr. 1/2, diluted, as a stimulant and anti-spasmodic.
“ lavandulae comp.	2	“ dr. 1 to 2, diluted, as a stimulant, anodyne, &c., for indigestion.
“ mindereri.	2	“ oz. 1/2 to 1, pure or diluted, as a diaphoretic, diuretic and laxative.
“ natri dulcis	3	“ dr. 1 to 2, diluted, as a sedative and anodyne.

Spongia.....	8	Dose, grs. 10 to 20, burnt and in syrup, as an alterative in scrofula, &c.
Stramonii folia.....	2	" grs. 2 to 3, in pill or powder, as an anodyne and sedative.
" semen.....	2	" grs. 1 to 2, ditto.
strychnia.....	$\frac{1}{2}$	" grs. 1-16th, ditto.
Sulphur flores.....	8	" dr. 1 to 2, in molasses, as a diaphoretic and laxative for psora and eruptions.
" loti.....	4	" ditto.
" ioduli.....	4	" ditto.
Syrupus papavie.....	1	" grs. 10 to dr. $\frac{1}{2}$, in lard oz. 1, as an ointment for tinea capitis, &c.
" rhei aromat.	8	" dr. 1 to 2, pure or diluted, as an anodyne.
" sarsaparillæ comp.	5	" dr. 2 to 3, ditto.
" scellæ.....	8	" oz. 1 to 2, as a cathartic, &c.
" zingiberis.....	1	" dr. 1, ditto.
Tabacum folia.....	1	" dr. 1 to 2, diluted, as an expectorant or diuretic in pulmonic disease, &c.
Tamarind. pupa.....	1	" dr. $\frac{1}{2}$ to dr. 1, infused in water pt. 1, as an enema in strangulated hernia.
Tapiora.....	1	Used in solution, without restraint, as a refrigerant and drink.
Tanacetum folia.....	4	Used in decoction as nutriment, with condiments.
Taunin.....	8	" gr. 1 to dr. 1, in powder or infusion, as a tonic.
Terebinthinæ spirit.....	1	" gr. 1 to 3, in pill or powder, as a tonic and astringent in diarrhoea, &c.
Tinctura acconiti folie.....	8	" dr. $\frac{1}{2}$ to 1, in emulsion, as a purgative, diuretic and stimulant.
" aloes et myr.	8	" gts. 10 to 20, diluted, as an anodyne and sedative in neuralgia, &c.
" assafœtidæ.....	8	" dr. 1 to 2, diluted, as a cathartic in dyspepsia.
" belladonnæ.....	4	" dr. $\frac{1}{2}$ to 1, diluted, as a stimulant, expectorant and anti-spasmodic in convulsions.
" camphoræ.....	1	" dr. $\frac{1}{2}$ to 1, diluted, as a stimulant.
" cantharidis.....	1	" dr. 1 to 2, diluted, as an anodyne and anti-spasmodic.
" capsici.....	1	" gts. 10 to 20, diluted, as a diuretic and stimulant.
" catechu.....	1	" dr. $\frac{1}{2}$ to 1, diluted, as a stimulant and gargle in tonsillitis.
" cinchone comp. --	1	" dr. 1, diluted, as an astringent in diarrhoea malignans.
" coelebici sem.	1	" dr. 1 to 2, diluted, as a diuretic and purgative in gout, rheumatism--
" colombræ.....	1	" dr. 1, diluted, as a tonic and astringent.
" conii.....	4	" dr. $\frac{1}{2}$ to 1, diluted, as a narcotic and anodyne.
" digitalis.....	4	" gts. 10 to 20, diluted, as a sedative and diuretic in phthisis, dropsy, &c.
" ferri chloridi.....	8	" gts. 10 to 20, much diluted, as a tonic and astringent.
" gentiure comp. --	1	" dr. 1, diluted, ditto.
" guaiaci.....	1	" dr. 1 to 2, diluted, as a stimulant and diaphoretic in rheumatism, &c.
" ammoniata.....	1	" dr. $\frac{1}{2}$ to 1, ditto.
" humuli.....	8	" dr. 1 to 2, pure or diluted, as an anodyne and antispasmodic.
" hyoscyami.....	4	" dr. $\frac{1}{2}$ to 1, ditto.
" iodiini.....	4	" gts. 10 to 20, diluted, as an alterative in scrofula.

MEDICINES REQUIRED, &c.

ARTICLES.	Quantity required.		DOSE AND MODE OF ADMINISTRATION, &c.
	lbs.	oz.	
Tinctura kino.....	2	4	Dose, dr. 1 to 2, diluted, as an astringent in diarrhoea, cholera infantum, etc.
" krameriae.....		4	" ditto. as an astringent in hemorrhage.
" lobeliae.....		4	" dr. $\frac{1}{4}$ to 1, diluted, as an emetic, but rarely used, and dangerous.
" myrrhæ.....		4	" dr. 1, diluted, as an astringent in tonsillitis, stomatitis and scurvy.
" opii.....	2		" gtt. 15 to 25, diluted, as an anodyne and antispasmodic.
" camphor.....	3		" dr. $\frac{1}{4}$ to 1, ditto.
" rhei.....		4	" dr. 2 to 3, diluted, as a purgative in diarrhoea.
" et aloes.....		4	" dr. 1, ditto.
" saponis comp. —	2		" Employed as rubefacient in sprains, rheumatism, etc.
" stramonii.....		4	" gtt. 10 to 20, diluted, as an anodyne and sedative.
" valerianæ.....	1		" dr. 1, diluted, as an anodyne and anti-spasmodic in mania-a-potu, etc.
" zingiberis.....	1		" dr. $\frac{1}{4}$ to 1, diluted, as a stimulant and antispasmodic.
Tragacantha.....	2		" Used in form of mucilage, chiefly as above mentioned.
Ulmæ cortex.....	2		" dr. $\frac{1}{4}$ to 1, infused in hot water as demulcent.
Ung. eupr. sub. acct.		2	" Applied to corns and swellings.
" hydrarg. nitrat.		4	" Applied to ulcers, tetters and tinea capitis.
" " oxidi rubr. —		4	" ditto. and chaneris.
" iodini.....		4	" Applied to bronchocele, buboes, &c.
" simplex.....	2		" Used chiefly as dressing to blisters.
" stramonii.....		3	" Used as an anodyne and antispasmodic to dilate pupils and dress piles; also as a narcotic.
" sulphuris.....	1		" Used for scabies and other cutaneous affections.
" zinci oxidi.....	1		" Applied to burns, ulcers and wounds.
Uva ursi.....		4	" dr. 1 to 2, in cold infusion, as diuretic and sedative in cystitis.
Valeriana.....		4	" grs. 10, in pill or powder, as sedative and antispasmodic.
Vinum aloes.....		1	" dr. 2, diluted, as cathartic, in constipation, etc.
" antimoniæ.....	8		" dr. $\frac{1}{2}$ to 1, diluted, as diaphoretic, and expectorant, dr. 2, to vomit in croup, &c.
" colchici radicis.....	8		" dr. 1, diluted, to purge, dr. $\frac{1}{2}$, as diuretic in gout and rheumatism.
" " seminis.....		8	" ditto.
Vaccine scabs.....		2	" Dissolved in water for vaccination.
Zinci acetat.....		2	" grs. 2 to 10, in water, oz. 1, as lotion, tonic, collyrium, and injection.
" carbonas.....		2	" Not given internally, but used chiefly in the above unguent.
" sulphas.....		4	" grs. 2 to 10, in solution, as lotion, tonic, collyrium, &c.
Zingiber pulv.....	7		" dr. $\frac{1}{2}$ to 1, infused, and given as a stomachic, aromatic and stimulant for indigestion, typhus fever, &c.

In addition to the articles above mentioned, others might be added, or some substituted for such as may be deemed less useful than they. Every vessel, too, will require, according to the number of her crew, size and accommodations, a general set of surgical instruments and appliances, dispensary and kitchen furniture, bedding, books and stationary. These, of course, ought to be adapted to the peculiar service for which the vessel is designed. If for the naval, the book of Instructions from the Bureau of Medicine and Surgery will specify the articles and quantities, and if the vessel be a private one, much less will usually be needed of these things. In the naval service, too, it must be borne in mind, that from its peculiarity and the double inspection undergone by seamen before their admission, the number of their complaints and injuries is limited, and a variety of implements and instruments, as well as medicines, employed much on land, are useless at sea, not only from no unsound persons being allowed to enter the service, but from the exclusion of women, children and aged persons, or such as are deformed, maimed insane or defective, mentally or corporeally.

While the above was in press, I was favored by Dr. Whetlan, Chief of the Bureau of Medicine and Surgery, with the following very important circular :

“GENERAL ORDER.

“Any Assistant Surgeon in the Navy, who shall fail to present himself for examination, after having been so ordered, (unless for reasons which may be satisfactory to the Department,) or who after examination shall be reported by the Board as ‘not qualified for promotion,’ shall be dropped from the list of officers of the Navy.

J. C. DOBBIN, Secretary of the Navy.

Navy Department, Sept. 7th, 1854.”

Extract from Naval Appropriation Bill, passed Aug. 5th, 1854.

“SEC. 4. And be it further enacted, that the two general orders of the Secretary of the Navy, dated August 31st, 1846, and May 27th, 1847, upon relative rank, shall have the force and effect of law.”

The first order referred to in the above law is this :

“GENERAL ORDER.

“Surgeons of the Fleet and Surgeons of more than twelve years will rank with Commanders ; Surgeons of less than twelve years with Lieutenants ; Passed Assistant Surgeons next after Lieutenants ; Assistant Surgeons not passed, next after Masters ; commanding and executive officers, of whatever grade, while on duty, will take precedence over all medical officers. This order confers no authority to exercise military command, and no additional right to quarters.

GEORGE BANCROFT.

Navy Department, August 31st, 1846.”

The second general order, of May 27, 1847, relates to Pursers, and confers on them the same rank as that given Surgeons.

ERRATA

- Page 20, last line, omit the word "the" before natural history.
Page 24, line two from top, read war, instead of "wars."
Page 84, line twelve, insert the word was before "used."
Page 107, line twenty-seven, read ragged for "rugged."
Page 241, transpose the "g" and the "y" in the words terminating the
twenty-fourth and twenty-fifth lines.
Page 246, line four, for "Linii" read Lini.
Page 252, line first, for "Whetland" read Whelan.

